RESEARCH DEPARTMENT MEMORANDUM

ECMWF

To:	CopD, FD, RD	
Copy:	HPS, HES, Alain Joly, François Bouyssel, Claude Fischer, Ryad El Khatib, Karim Yessad	
From:	ECMWF	
Date:	March 10, 2019	File: RD19-TBD
Subject:	**IFS Cycle CY46R1**	

CY46R1 was created during the period 31/May/18 - 21/Dec/18.

Contributors:

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Merged branch names:

Andrew Dawson - diad_CY45R2_ocean_v8 - 46r1 ocean late contribution (IFS-601)

- IFS-580: NEMO/LIM versions should be configurable
- IFS-581: Research experiments should be able to use XIOS

Tomas Wilhelmsson - nat_CY45R2_for_46R1_v0 - 46r1 v0: Starting point for 46R1 (IFS-548)

- IFS-547: ODB index violations
- IFS-431: Bit-identicality testing with "git ifstest"

Gabor Radnoti - dag_CY45R2_for_46R1_v1 - 46r1 v1: Bit identical scripts contributions (IFS-539)

- IFS-324: Add profiling tools to ifs scripts
- IFS-334: NEMO V3.6 updates + preparation for changes to the partial coupling scheme.
- IFS-389: Optimise odb loading related tasks in operations
- IFS-435: preparations for new scatterometers
- IFS-494: Always write defs to file
- IFS-496: Enforce a particular version of ecflow in the acceptance tests
- IFS-513: 1 hourly radiation for ENS
- IFS-370: Atmospheric composition / CAMS contributions for 46r1
- IFS-417: ESAS contributions for 46R1 BIT IDENTICAL
- IFS-462: Merge of ecFlow suite definitions in Python
- IFS-500: Bit-identical fixes and improvements for ENS (scripts)
- IFS-507: Model uncertainty pre-merge for CY46R1
- IFS-528: Extra ecFlow definitions work

Tomas Wilhelmsson - nat_CY45R2_for_46R1_v1 - 46r1 v1: Bit identical source and test contributions (IFS-522)

- IFS-385: Compilation for OSX
- IFS-433: The LPARPERT configuration of eps_nemo is broken
- IFS-545: NEMO archiving tasks incorrectly added for forecasts ¡ 72h
- IFS-334: NEMO V3.6 updates + preparation for changes to the partial coupling scheme.
- IFS-365: Application of multiple grid IFS-Atlas capability to tracer transport
- IFS-418: Optimise reading of eda error files
- IFS-435: preparations for new scatterometers
- IFS-498: Surface analysis for 46r1: bit-identical changes
- IFS-502: Update of O3 saftey option (IFS-350)
- IFS-504: Improvements/fixes to multi-year suite in type longrange
- IFS-510: Fortran Standard NaN trapping
- IFS-511: Some upgrades to double precision in model setup
- IFS-537: Include updated PGI changes for 18.4 for 46r1
- IFS-370: Atmospheric composition / CAMS contributions for 46r1
- IFS-417: ESAS contributions for 46R1 BIT IDENTICAL

- IFS-507: Model uncertainty pre-merge for CY46R1
- IFS-548: 46r1 v0: Starting point for 46R1

Tomas Wilhelmsson - nat_CY45R2_for_46r1_v2 - 46r1 v2: OOPS (IFS-543)

- IFS-285: OOPS
- IFS-530: Capability to build IFS with Intel compiler
- IFS-531: Aeolus in OOPS
- IFS-522: 46r1 v1: Bit identical source and test contributions

Tomas Wilhelmsson - nat_CY45R2_for_46R1_v3 - 46r1 v3: Neutral changes (IFS-552)

- IFS-321: Improved wind vector interpolation in semi-Lagrangian departure point scheme
- IFS-323: Snow Multi-Layer + Warm start (passive)
- IFS-493: Various BUFR2ODB fixes and improvements
- IFS-517: Slim EDA optimisation, 50 member EDA
- IFS-543: 46r1 v2: OOPS

Tomas Wilhelmsson - nat_CY45R2_for_46R1_v4 - 46r1 v4: Data assimilation (IFS-554)

- IFS-369: Surface analysis for 46r1: EDA Jacobians and SMOS neural network assimilation
- IFS-515: IR aerosol detection bugfix
- IFS-563: Updates to the surface experiment type
- IFS-416: ESAS contributions for 46R1
- IFS-552: 46r1 v3: Neutral changes

Tomas Wilhelmsson - nat_CY45R2_for_46R1_v5 - 46r1 v5: Physics and dynamics (IFS-561)

- IFS-390: Combined Model (Physics and Numerics) branch
- IFS-554: 46r1 v4: Data assimilation

Tomas Wilhelmsson - nat_CY45R2_for_46R1_v6 - 46r1 v6: Coupled processes (IFS-564)

- IFS-319: Coupled Processes Team contributions to CY46R1
- IFS-561: 46r1 v5: Physics and dynamics

Tomas Wilhelmsson - nat_CY45R2_for_46R1_v7 - 46r1 v7: Continuous DA (IFS-582)

- IFS-514: Continuous DA
- IFS-564: 46r1 v6: Coupled processes

Tomas Wilhelmsson - nat_CY45R2_for_46R1_v8 - 46r1 v8: Late contributions (IFS-577)

- IFS-524: FDB5 - IFS should abort on exception

- IFS-573: Bounds error in Intel optimisations
- IFS-587: Perform more stringent checks on GEO radiances in pre-screening
- IFS-620: bug fix in screen level (rh2m) analysis
- IFS-621: separate variable for diagnostic CAPE to correctly compute MXCAPE6
- IFS-625: Revive simulated satellite images in 46R1
- IFS-631: bug fix for single precision
- IFS-287: Introduce new Experimental Observation Ingest Framework
- IFS-288: COPE: add ability for IFS to read odb2 data files
- IFS-291: Analysis coupling of OCEAN5 SST in the tropics
- IFS-365: Application of multiple grid IFS-Atlas capability to tracer transport
- IFS-463: Port the surface experiment to ecFlow
- IFS-516: Integrate operational DDH scripts and sources into IFS
- IFS-546: Build additional NEMO(QC) tools for the OPA suite
- IFS-549: NEMO OpenMP optimisations
- IFS-550: Activate compilation of fieldman with cce/8.7.0
- IFS-551: Activate safe ozone chemistry
- IFS-565: Integrate ifs-bundle in FD's metabuilder CI suite
- IFS-568: Detection of errors in radiosonde drift positions
- IFS-588: New SL scheme options, optimizations and various fixes
- IFS-590: Improve preparedness for potential future changes to the GEO radiance observing system
- IFS-592: Use FDB5 in offline wam
- IFS-593: Use FDB5 in longrange experiment
- IFS-594: Random number seed generation for single precision
- IFS-599: Add three more RTTOV binaries to build
- IFS-602: Fix bug in msgpass_storeobs triggered in rare circumstances.
- IFS-609: Introduce a new namelist item that is passed ultimately to vdftofdc.F90. Updates to passive EPPES Fortran routines.
- IFS-619: RAPS 18
- IFS-557: Small fixes to CAMS 46r1 contribution
- IFS-582: 46r1 v7: Continuous DA
- IFS-601: 46r1 ocean late contribution
- IFS-608: Final atmospheric composition updates for 46R1

Alan Geer - stg_CY45R1_allsky_for_46r1 - All-sky merge for 46R1 (IFS-428)

- IFS-306: compute and use lsm_FOV for MWIs (SSMIS-F17, GMI and AMSR-2)
- IFS-307: allow passive assimilation of MWI over land using ATLAS
- IFS-309: add SSMIS-F17 150 h GHz and GMI 166 v/h GHz
- IFS-405: add Convection and PBL type to ODB space for allsky
- IFS-406: New Mie-tables generated by using permittivity model (Rosenkranz15)
- IFS-412: Microwave observation operator upgrades including partial RTTOV v12.2 upgrade
- IFS-424: Negative Q cleanup in observation operator
- IFS-427: All-sky superob thinning in screening trajectory

Zak Kipling - cxzk_CY45R2_COMPO_for_46R1 - Atmospheric composition CAMS contributions for 46r1 (IFS-370)

- IFS-246: Sea salt emitted over freshwater lakes

- IFS-397: aerosol lidar assimilation
- IFS-401: Add GLOMAP aerosol scheme as option
- IFS-439: Allow prognostic CO2 to be used in RTTOV observation operator
- IFS-446: Read monochromatic aerosol optical properties from file rather than hard-coding them
- IFS-459: On-line dry deposition for chemistry
- IFS-460: Update of IFS-MOCAGE chemistry scheme
- IFS-465: Atmospheric composition / CAMS contributions for 46r1 / former 45R2 contribution with small scale devs
- IFS-466: Atmospheric composition / CAMS contributions for 46r1 / new sulphate conversion scheme
- IFS-467: Atmospheric composition / CAMS contributions for 46r1 / aerosol resuspension scheme
- IFS-468: Update of CB05 and BASCOECB05 chemistry by CAMS42
- IFS-475: chem_ic dir per EDA member
- IFS-483: Removal of orphaned composition routines
- IFS-486: Output of chemistry fluxes
- IFS-491: improve diurnal cycle for biomass burning emissions
- IFS-492: Clean up of vdfmain for tracer fluxes
- IFS-503: CAMS chemistry script update
- IFS-509: Optimise triggers for CAMS "cycling forecast" experiment
- IFS-512: Output near-surface aerosol extinction/absorption at 0

Andrew Dawson - diad_CY45R1_ens_for_CY46R1 - Bit-identical fixes and improvements for ENS (scripts) (IFS-500)

- IFS-409: The eps_nemo experiment fails when run with ocean turned off
- IFS-430: The eps_nemo experiment fails in forced SST mode
- IFS-429: Use the I/O server in eps_nemo experiments
- IFS-455: Make 0.5 degree wave model default for TCo319 eps_nemo

Stephanie Johnson - cxsj_CY45R2_for_46r1/cxsj_CY46R1_for_46r1 - Collection of longrange scripts contributions for 46r1 (IFS-597)

- IFS-578: Making warm skin layer switch on depending on ocean vertical levels
- IFS-579: Mirroring changes to SV&EDA menus in eps_nemo

Peter Bechtold - pae_CY45R1_phys4_318_340_344_267_441/pae_CY45R1_phys4_oops - Combined Model (Physics and Numerics) branch (IFS-390)

- IFS-174: Longwave scattering plus optimizations and improvements
- IFS-267: 3D aerosol climatology and possible improvements to aerosol optics/background AOD
- IFS-281: New representation of sub-grid heterogeneity of cloud condensate for radiation and microphysics
- IFS-318: small convection improvements, technical: enabling subsidence to be taken off convection, preparations for TKE
- IFS-344: Implement coupling between continuity equation and physics
- IFS-410: Wet tile skin conductivity adjustment
- IFS-441: fixing some issues with the 2T representation for the wet skin tile

- IFS-497: Bugfix and optimization of spherical geometry in SL scheme (TL/AD code)
- IFS-340: Radiation upgrade and new representation of cloud heterogeneity

Philip Browne - dipb_CY45R1_ESAS_for_CY46R1_fix/dipb_CY45R1_dipb_CY45R1_ESAS_for_CY46R1_-rttov - ESAS contributions for 46R1 (IFS-416)

- IFS-298: Apply slant path for GEO radiances
- IFS-299: Desroziers errors for GEO radiances
- IFS-304: Account for ATMS correlated observation errors
- IFS-305: Passive AMSU-A all sky fixes and improvements
- IFS-414: DBNet update
- IFS-425: Full RTTOV upgrade to version 12.2
- IFS-432: OOPS: use consistent interpolation in traj and min steps
- IFS-428: All-sky merge for 46R1

Philip Browne - dipb_CY45R1_ESAS_for_CY46R1_BI - ESAS contributions for 46R1 BIT IDENTICAL (IFS-417)

- IFS-296: Upgrade of the augmented control variable
- IFS-440: Preparation for Metop-C IASI & NOAA-20 CrIS
- IFS-490: Refinements to Surface analysis only configuration of an (LSSAONLY)
- IFS-495: Contributions to CY46R1 on ocean analysis system

Andrew Dawson - diad_CY45R2_pysuite_extras_for_CY46R1 - Extra ecFlow definitions work (IFS-528)

- IFS-452: Port the opa experiment to ecFlow
- IFS-454: Port the longrange experiment to ecFlow
- IFS-525: Upgrade pyflow support library
- IFS-526: Add missing clean_source_dirs task for pysuite
- IFS-527: Use correct variable values in ecFlow definitions
- IFS-529: Support I/O server in eps_nemo ecFlow
- IFS-533: Support single precision in eps_nemo ecFlow suite
- IFS-534: Add existing API documentation to Sphinx for ecFlow suites

Zak Kipling - cxzk_CY45R2_for_46R1_v8_CAMSfixes - Final atmospheric composition updates for 46R1 (IFS-608)

- IFS-603: Technical changes for new ozone products
- IFS-606: CAMS contribution for 46R1 : new aerosol scavenging and smaller scale developments
- IFS-607: CAMS contribution for 46R1 : IFS-GLOMAP developments

Andrew Dawson - diad_CY45R2_pysuite_for_CY46R1 - Merge of ecFlow suite definitions in Python (IFS-462)

- IFS-294: Port the eps_nemo experiment to ecFlow

- IFS-453: Port the wam experiment to ecFlow
- IFS-461: Port the eps_sv experiment to ecFlow

Simon Lang - nesl_CY45R1_for46r1_modelunc - Model uncertainty pre-merge for CY46R1 (IFS-507)

- IFS-336: Passive Model Uncertainty developments for 46R1

Robin Hogan - parr_CY45R1_ecrad_upgrad_inhom - Radiation upgrade and new representation of cloud heterogeneity (IFS-340)

- IFS-174: Longwave scattering plus optimizations and improvements
- IFS-281: New representation of sub-grid heterogeneity of cloud condensate for radiation and microphysics

Zak Kipling - cxzk_CY45R2_COMPO_for_46R1 - Small fixes to CAMS 46r1 contribution (IFS-557)

- IFS-556: Changes to allow the S3 AOD data to be used
- IFS-562: S5P passive monitoring in IFS

All

- Bug fix to longrange-type multi-year suite contributions (IFS-613)
- Change of CO2 fluxes from grib1to grib2 (IFS-744)
- FDB5 - IFS should abort on exception (IFS-524)
- Improvements/fixes to multi-year suite in type longrange (IFS-504)
- Include updated PGI changes for 18.4 for 46r1 (IFS-537)
- fdb clean-up (IFS-555)

Retish Senan, Christopher Roberts, Kristian Mogensen, Stephanie Johnson, Tim Stockdale - ners_CY45R1_multiyear_for_CY46R1 - BIT IDENTICAL

Improvementsfixes to multi-year suite in type longrange (IFS-504)

Multi-year suite experiments do not currently run out-of-the-box. This contribution includes a set of technical updates and fixes to the longrange-type multi-year suite for enabling long multi-decadal integrations.

Requires prepIFS overlay: /home/rd/ners/overlays/multiyear_for_CY46R1

More information: [https://software.ecmwf.int/wiki/display/~ners/Multiyear+Suite+updates+for+CY46R1+longrange-type+experiments]

Files modified (IFS): `wrresf.F90`

Tomas Wilhelmsson, John Hodkinson, Simon Smart, Tiago Quintino - nat_CY45R2_catch_-FDB_errors - BIT IDENTICAL

FDB5 - IFS should abort on exception (IFS-524)

Testing fdb5 in operational esuite (45R1), I have the following problem:

- task pikachu://e_45r1fdb5/lag/12/archive/archive_satim_new is aborted, (output:/sc2/tcwork/emos/emos_-esuite/emos_data/log/9772/e_45r1fdb5/lag/12/archive/archive_satim_new.2)
- model completed, however, there is an error that was *not caught*: (output: /sc2/tcwork/emos/emos_-esuite/emos_data/log/9772/e_45r1fdb5/main/12/fc/model.1 from log server ccb-log1@9316) -

```
SeriousBug: Key::get() failed for [levtype] in {channel=5,class=od,date
    =20180614,domain=g,expver=9772,ident=57,instrument=207,param=260510,
    step=1,stream=oper,time=1200,type=ssd}  in  (/scratch/ma/deploy/
    metabuilds/ecflow-metab_5062/ccb/CRAY.85/ifs_support/ifs_support/mars-
    server/src/fdb5/database/Key.cc +163 get)
```

- the same experiment run with fdb4 produced the ssd type.

Wayne Gaudin, Michael Sleigh, Patrick Gillies, Sami Saarinen, Willem Deconinck - diwg_-CY45R1_pgi18.4_v11 - BIT IDENTICAL

Include updated PGI changes for 18.4 for 46r1 (IFS-537)

This branch includes changes needed to compile and validate 9/10 tests in 45r1 using the PGI FORTRAN compiler, version 18.4, on LXG.

New IFDEFS have been included that are awaiting compiler fixes, but the original source remains unchanged if the PGI compiler is not used.

Any old PGI IFDEF code blocks that now function correctly have been removed.

If the GNU compiler is used on the PGI code, then that compiles as well and validates 10/10.

Changes are needed to the bundle and Willem is going to improve the build procedure so these are not needed.

At the moment the following changes are needed to bundle.yml and CMakeLists.txt:

-ecbuild: git: ${BITBUCKET}/~datk/ecbuild version: PGI_fix bundle: false

-b2o: git: ${BITBUCKET}/cope/b2o version : PGI_fix

I have to modify the following CMakeLists.txt files to include PGI libs at link time. I'm pretty certain there is a way to use the Fortran compiler to link instead of g++.

vi $GITLOCALROOT/ifs-bundle/diwg_CY45R1_pgi18.4_v11/source/eckit/CMakeLists.txt $GITLOCALROOT/ifs-bundle/diwg_CY45R1_pgi18.4_v11/source/fckit/CMakeLists.txt $GITLOCALROOT/ifs-bundle/diwg_CY45R1_-pgi18.4_v11/source/b2o/CMakeLists.txt $GITLOCALROOT/ifs-bundle/diwg_CY45R1_pgi18.4_v11/source/cope/CMakeLists.t $GITLOCALROOT/ifs-bundle/diwg_CY45R1_pgi18.4_v11/source/atlas/CMakeLists.txt $GITLOCALROOT/ifs-bundle/diwg_CY45R1_pgi18.4_v11/source/ifs-source/CMakeLists.txt $GITLOCALROOT/ifs-bundle/diwg_CY45R1_-pgi18.4_v11/source/odb-tools/CMakeLists.txt

ecbuild_add_cxx_flags("-L /usr/local/apps/pgi/18.4/lib -lpgf90 -lpgf90_prof -lpgf902 -lpgf90_rpm1 -lpgf90rtl -lpgftnrtl -lpgmath -lpgnuma -lpgmp -lpgf90_rpm1_p -lpgc -lpgf90_prof -lpgf90_rpm1_p ") ecbuild_add_fortran_flags("-pgc++libs -L /usr/local/apps/pgi/18.4/lib -lpgf90_prof -lpgf90_rpm1_p")

I also have to change required version numbers: vi $GITLOCALROOT/ifs-bundle/diwg_CY45R1_pgi18.4_-v11/source/odb-tools/CMakeLists.txt

ecbuild_requires_macro_version(2.0) ecbuild_use_package(PROJECT eckit VERSION 0.9 REQUIRED)

Files modified (CMAKE): `aeolus.cmake autopromote.cmake bl.cmake compile_flags.cmake obstat.cmake odbport.cmake`

Files modified (IFS): `traj_semilag_mod_oops.F90 aer_src.F90 sugfl1.F90`

Files modified (IFSOBS): `CMakeLists.txt ll_mod.F90 hdf_dbase_mod.F90`

Files modified (NEMO): `CMakeLists.txt arch_configuration.cmake arch_keys_Cray.cmake arch_keys_GNU.cmake arch_keys_PGI.cmake compiler_flags.cmake compiler_flags_-PGI_Fortran.cmake tools_configuration.cmake tools_keys_PGI.cmake`

Files modified (OBSTAT): `obstat_scat_plot.F90`

Files modified (ODB): `CMakeLists.txt b2o_convert_pilot.F90 b2o_convert_synop_land.F90 b2o_convert_temp_hires.F90 b2o_convert_windprofiler.F90 aeolus.h b2o_debug.h`

Files modified (WAM): `uras3a.F intwaminput.F`

Gabor Radnoti, Andrew Dawson, Anna Mueller-Quintino - dag_CY45R2_for_46R1_v2/rdx_-CY45R1_esuite - BIT IDENTICAL

fdb clean-up (IFS-555)

The fdb clean-up mechanism needs improvement. The above branches contain some improvements, but further work is needed for clean-up scripts used in eps and maybe other suites (scripts cleanvarfc,cleanmc,cleanocean,etc). Anna has implemented earlier fdb5 adaptation of wipefdb, i.e. it is ensured that at the end of the experiment, before cancel, all fdb content is cleaned up. However, during the runtime of the exp using fdb5, the clean-up of old days was implemented only for 4dvar. I extended it now to fc only exps, where the old solution anyway turned out to be bugged and unsafe even for fdb4. The clean*.sms scripts are very dirty, they contain hard-wired streams, they are not general enough. the above branches contain fixes for 4dvar and fc-only, i leave the status "in progress" until for all needed suties issues are solved.

Files modified (AEOLUS): `arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_-l2bp_primary_ec.F90`

Files modified (ALGOR): `minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_-caller.h m1qn3a.F90`

Files modified (ATLAS_APPS): `CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_-module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_-module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_-module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_-weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_-sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_-wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_args_module.F90 dwarf_command_module.F90 dwarf_data_module.F90 dwarf_util_module.F90`

Files modified (BL): `dynamic_symbols.c mf_blacklist.b`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake prepdata.cmake satrad.cmake target_ignore_missing_symbols.cmake trans.cmake`

Files modified (DUMMY): `aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_-suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_-horiz_flt.F suefpbip.F sueinfce.F`

Files modified (ENKF): `obs_base_mod.F90 obs_constants.F90`

Files modified (FIELDMAN): `FieldSet.hpp`

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_tl.F90 cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5_gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90 cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90 cpgtl.F90 cpmvvps.F90 cptend_new.F90 cputqy.F90 gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90 gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90 gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90 gnhqe_tndlagadiab_gw.F90 gnhqe_tndlagadiab_svd.F90 gnhqe_xxd.F90 gnhsvd2gw.F gnhx.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90 gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90 gpgw.F90 gphpre.F90 gpinislb.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90 gprcph.F90 gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90 gpvcts.F90 gpvcw.F90 gpxx.F90 lacdyn.F90 lacdynshw.F90 lacdynshwad.F90 lacdynshwtl.F90 ladad.F90 ladine.F90 ladinead.F90 ladinetl.F90 laitre_gmv.F90 lanhqesi.F90 lanhsi.F90 lanhsib.F90 lapinea.F90 lapineb.F90 lapinebad.F90 lapinebtl.F90 larcin2.F90 larcin2ad.F90 larcina.F90 larcinaad.F90 larcinatl.F90 larcinb.F90 larcinbad.F90 larcinha.F90 larcinhb.F90 larmes.F90 lassie.F90 lassietl.F90 latte_bbc.F90 latte_kappa.F90 latte_kappaad.F90 latte_kappatl.F90 lattes.F90 lattesad.F90 lattestl.F90 lattex.F90 lavabo.F90 lavabotl.F90 lavent.F90 postphy.F90 si_cccor.F90 sidd.F90 sigam.F90 silkap.F90 silkapi.F90 sinhqe_seve.F90 sinhqe_vderi.F90 siptp.F90 siqq.F90 siseve.F90 siskap.F90 siskapi.F90 sitnu.F90 spchor.F90 spcsi.F90 spnh_conv_nhvar.F90 spnh_conv_prhs.F90 spnhqesi.F90 spnhqesi_prodskap.F90 spnhsi.F90 tropo_tep.F90 aro_adjust.h aro_ground_diag.h aro_ground_diag_2isba.h aro_lima.h aro_rain_ice.h aroini_micro.h aroini_micro_lima.h aroini_nsv.h deello.intfb.h eapply_pll_recf.intfb.h ebicli.intfb.h ebipos.intfb.h ecoupl1.intfb.h ecoupl1ad.intfb.h ecoupl2.intfb.h ecoupl2ad.intfb.h ecvargpad.intfb.h ecvargptl.intfb.h ediagb_psot.intfb.h efpfilter.intfb.h eincli1.intfb.h eincli10.intfb.h eincli2.intfb.h eincli3.intfb.h eincli4.intfb.h eincli5.intfb.h eincli6.intfb.h eincli7.intfb.h eincli8.intfb.h eincli9.intfb.h einflation_mean.intfb.h elascaw.intfb.h elsac.intfb.h elsin0ta.intfb.h elswa3.intfb.h ereadsigmab.intfb.h ereadstd.intfb.h erlbc_post_req.intfb.h escaljgs.intfb.h eseimpls.intfb.h eseimplsad.intfb.h esetup_pll_recf.intfb.h eslextpol.intfb.h espcm.intfb.h espfp.intfb.h espnhqesi.intfb.h espnhqesi_prodskap.intfb.h etenc.intfb.h etransdir_nhconvprhs.intfb.h etransinv_mdl.intfb.h etransinv_nhconv.intfb.h etransinv_nhconvprhs.intfb.h euvcopy.intfb.h evarjkini.intfb.h ewrlsgrad.intfb.h fp2sx1.h fp2sx2.h fpboyd.intfb.h fpezo2h.intfb.h fpezone.intfb.h fpfillb.intfb.h gp_horiz_flt.intfb.h gridfpossfx_init.h moevar.intfb.h ncerr.intfb.h posfpbipos.intfb.h prefpbipos.intfb.h prep2_real.h prep_step2.h rdclimosfx.h readjbbal.intfb.h readjbbal_nc.intfb.h readjbdat96.intfb.h readjbdat96_nc.intfb.h suafn1sfx.h suafn2sfx.h suafn3sfx.h suedim.intfb.h suefpbip.intfb.h suefpg3.intfb.h suegem_naml.intfb.h suehow1.intfb.h suehow2.intfb.h suehowlsm.intfb.h sueinfce.intfb.h sueinif.intfb.h suejbtest.intfb.h suescal.intfb.h suescal_jb.intfb.h suescal_norms.intfb.h sufpcsfx.h sufpezo.intfb.h wrsfx.h incli0.F90 incli1.F90 incli10.F90 incli2.F90 incli3.F90 incli4.F90 incli5.F90 incli8.F90 incli9.F90 relnew.F90 simrel.F90 cabane.F90 caclsi.F90 caisse.F90 calina.F90

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blinit.F90 comtc.F90 decis.F90 defrun.F90 fgwnd.F90 fscatin.F90 gefger.F90
inifger.F90 kscatin.F90 mkglobstab_model.F90 new_thinn.F90 new_thinner_no_-
sq.F90 obadat.F90 pertobs.F90 pre_thinner.F90 rd_obs_boxes.F90 readoba.F90
reo3sin.F90 scaqc.F90 scat_ob.F90 screen.F90 screen_timeslot.F90 sekf_prep_-
ascat.F90 setup_tovscv.F90 sufglim.F90 sugoms.F90 suobarea.F90 suobs.F90 suobs_-
legacy.F90 suobsb.F90 suobscor.F90 updobs.F90 wscatin.F90 wrcom.F90 allobs_-
bias_error_mod.F90 allobs_error_mod.F90 allobs_oper_mod.F90 cpg_drv_ad_oops.F90
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covariance_param_mod.F90 fields_interp_mod.F90 fields_io_mod.F90 fields_write.F90
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aer_lidsimop.F90 aer_lidsimtl.F90 bgobs.F90 calc_varqc_weights.F90 co2slicing.F90
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hretr_conv.F90 hretr_rad.F90 hsatang.F90 mw_clearsky_screen_mfdecis.F90 obscor_-
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drydepvel.F90 aer_no3nh4.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_-
layer.F90 aer_rad.F90 aer_radon.F90 aer_resuspension.F90 aer_rrtm.F90 aer_-
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ddr_surf_res1.F90 ddr_we_season.F90 depvel_wsl.F90 ec_phys.F90 ec_phys_ad.F90
ec_phys_drv.F90 ec_phys_drv_ad.F90 ec_phys_drv_tl.F90 ec_phys_tl.F90 fireinj.F90
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unbal_eda.F90 raingg_get.F90 raingg_get_ad.F90 raingg_get_tl.F90 raingg_obsop.F90
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screen.F90 raingg_setup.F90 raingg_wrapper.F90 cmoctmap.F90 cmoctmap_inv.F90
get_spp_conf.F90 modgrin.F90 su0phy.F90 su0yoma.F90 su0yomb.F90 su1yom.F90
su_grib_api.F90 su_surf_flds.F90 suafn.F90 suafn1.F90 suafn2.F90 suafn3.F90
sualdyn.F90 sualdynb.F90 suarg.F90 suarg_datestuff.F90 suatlas_mesh.F90 submat.F90
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vertfespline_half.F90 sunh_vertfespline_inv.F90 sunhbmat.F90 sunhheg.F90 sunhqebmat.F
sunhqesi.F90 sunhsi.F90 sunhsi_testconv.F90 suoph.F90 suoph0.F90 suoptproma.F90
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add_moderr_tl.F90 addhysin.F90 addhysinad.F90 adtest.F90 aerlid_setup.F90 balvert.F90
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cvargpad.F90 cvargptl.F90 djbdy.F90 estsig.F90 estsiga.F90 evcost.F90 fltbgerr.F90
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preppcm.F90 rd801.F90 rdfpinc.F90 read_surfgrid_traj.F90 readvec.F90 savmini.F90
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taskobtl_thread.F90 tlprop.F90 tltest.F90 upspec.F90 varcalc.F90 varflt_crt.F90
varflt_trunc.F90 vec2gp.F90 wavxform.F90 wrchres.F90 writelct.F90 writeoba.F90
writesd.F90 xformev.F90

Files modified (IFSAUX): i_system.c facgrm.F90 fadgra.F90 fagote.F90 faieno.h falgra.h
faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.h isrchfltpv.body.h
lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_mod.F90 mpl_allgatherv_-
mod.F90 mpl_end_mod.F90 mpl_gatherv_mod.F90 yomlun_ifsaux.F90 faconvgrib.F90
abor1.F90 dr_hook_util.F90 drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 hdf_dbase_mod.F90
odb2_dbase_mod.F90 odbserver_dbase_mod.F90 CMakeLists.txt test_dbase_performance.F90
test_dbase_view.F90 test_overhead_odb2.F90 test_parallel_distribute.F90

Files modified (NEMO): diahth.F90 zdfmxl.F90 arch-IBM_EKMAN_INGV.fcm namelist_-
cfg CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref
namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_-
ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90
diaar5.F90 diacfl.F90 diadct.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90
cla.F90 lbclnk.F90 lib_mpp.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90
sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_-
clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90
sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90 traldf.F90 tranxt.F90 trazdf.F90

trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90
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athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90
compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90
create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
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Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
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outer_ORCA1_Z46 setup_namelist_outer_ORCA1_Z75 setup_namelist_outer_io setup_-
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config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90 config.cray

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go66go65_ua.ksh amona_go66go65_waves.ksh omona_go66_1h.ksh omona_go66_3h.ksh
plot_10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh
plot_sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
oras5_sst_2017.ksh omona_ostia_sst_2017.ksh plot_sst_2017.ksh retrieve_oras4_-
sst_2017.ksh retrieve_oras5_sst_2017.ksh retrieve_ostia_sst_2017.ksh standard_-
areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
netcdfinput.F90 omonadata.F90 omonatypes.F90 orca_grid.F90 spherepolygons.F90
toolspar_kind.F90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
plotnemo plotobs plotobs.F90 plotpoints plotpoints.F90 plotpointsnc plotreg.F90
plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 config.macports config.macportsomp fbaddrename.
fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
coords.F90 config.macports

Files modified (OBSTAT): obstat_def.F90 iniitemloc.F90 inisoftdef.F90 obstat_scat_-
plot.F90 plotsoft.F90 updsoft.F90 writegridstats.F90 writescat.F90 writesoft.F90

Files modified (ODB): CMakeLists.txt cma_open.c b2o_convert.F90 b2o_convert_atms.F90
b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_mwri_1d.F90 b2o_convert_-
oscat.F90 b2o_convert_pilot.F90 b2o_convert_rain_rates.F90 b2o_convert_synop_-
land.F90 b2o_convert_temp_hires.F90 b2o_convert_windprofiler.F90 odb_target_-
ignore_missing_symbols.cmake sat_atovs_hyper.sql scat_ambig_select.sql sat_-
atovs_hyper.sql scat_ambig_select.sql black_robody_4.sql decis_robhdr_2.sql
robhdr.sql sat_atovs.sql sat_atovs_hyper.sql scat_ambig_select.sql scatt.h
b2o_debug.h cmaio.h codb.c twindow.c bator_datetime_mod.F90 bator_decodbufr_-
mod.F90 bator_decodgrib_mod.F90 bator_decodhdf5_mod.F90 bator_decodnetcdf_-
mod.F90 bator_ecritures_mod.F90 bator_impr_mod.F90 bator_init_mod.F90 bator_-
lectures_mod.F90 bator_module.F90 bator_rad_postproc_mod.F90 bator_saisies_-
mod.F90 bator_util_mod.F90 bator_namelist.nam.h Bator.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90 FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface. IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 Logbook.interface.F90 LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90 ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90 ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.c ObsBiasIncrementVARBC.h ObsBiasIncrementVARBC.interface.F90 ObsBiasLListsTOVSCV.F90 ObsBiasLListsVARBC.F90 ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90 ObsBiasVARBC.cc ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsSpaceODB.cc ObsSpaceODB. ObsSpaceODB.interface.F90 ObsVector.cc ObsVector.h ObsVector.interface.F90 StateIFS.cc StateIFS.h Trajectory.list.F90 VariablesIFS.interface.F90 ifs_- init_wrapper.F90 instantiateObsAuxFactories.h instantiateObsErrorFactory.h instantiateObsOpFactories.h instantiateTlmFactory.h mpi_wrapper.F90 pm_link_- mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): matutils.F90 chgrib.c fillgaussgrib.F90 unbal_eda.F90 wavelet_add_mod_hcor.F90

Files modified (RADIATION): radiation_aerosol_optics_data.F90

Files modified (SATRAD): getcparam.h mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_screen_- 1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F90 rtlimb_hat.F90 rtlimb_- hat_ad.F90 rtlimb_hat_tl.F90 rttov_read_ascii_sccldcoef.F90 rttov_read_coefs.F90 co2cld.F90 getcparam.F90 phrtsetup.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_- ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_- fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_- windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_- bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_- fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (SURF): `surfexcdriver.F90 surfexcdriver.h surfexcdriver_ctl_mod.F90 vexcs_mod.F90 vsurf_mod.F90 suct01s.F90 yomct01s.F90`

Files modified (TRANS): `dealloc_resol_mod.F90`

Files modified (WAM): `uras3a.F intwaminput.F yowcoup.F`

Retish Senan - ners_CY45R1_multiyear_for_CY46R1_ver2 - BIT IDENTICAL

Bug fix to longrange-type multi-year suite contributions (IFS-613)

A bug in the archival of 6-hourly accumulated fields (when accumulation frequency is set to NRSACCFRQ=6) is fixed.

Scripts Branch: ners_CY45R1_multiyear_for_CY46R1_ver2

John Hodkinson - [No branch] - BIT IDENTICAL

Change of CO2 fluxes from grib1to grib2 (IFS-744)

This change has already been dealt with through DGOV after a Jira by [˜paf] (https://jira.ecmwf.int/browse/DGOV-172) and needed to go through an IFS Jira ticket since part the parameters are among the outputs of the IFS:

aco2nee: 228080 // Accumulated Carbon Dioxide Net Ecosystem Exchange aco2gpp: 228081 // Accumulated Carbon Dioxide Gross Primary Production aco2rec: 228082 // Accumulated Carbon Dioxide Ecosystem Respiration fco2nee: 228083 // Flux of Carbon Dioxide Net Ecosystem Exchange fco2rec: 228085 // Flux of Carbon Dioxide Ecosystem Respiration fco2gpp: 228084 // Flux of Carbon Dioxide Gross Primary Production

This change is needed to maintain the information content of the data at higher precision (in order to conserve the global budget especially for user converting to netcdf)

[No branch]

Assimilation

- Account for ATMS correlated observation errors (IFS-304)
- Aeolus in OOPS (IFS-531)
- Allow prognostic CO2 to be used in RTTOV observation operator (IFS-439)
- Analysis coupling of OCEAN5 SST in the tropics (IFS-291)
- Apply slant path for GEO radiances (IFS-298)
- Bugfix and optimization of spherical geometry in SL scheme (TL/AD code) (IFS-497)
- Change the MWHS-2 coefficient file to the version with correct polarisations (IFS-566)
- Changes to allow the S3 AOD data to be used (IFS-556)
- Continuous DA (IFS-514)
- Contributions to CY46R1 on ocean analysis system (IFS-495)
- DBNet update (IFS-414)
- Desroziers errors for GEO radiances (IFS-299)
- Detection of errors in radiosonde drift positions (IFS-568)
- EDA JBCALC calculation of B covariances: Reading in parallel in sujbwavgen (IFS-536)
- Extend usage of GEO radiances at high zenith angles (IFS-297)
- Improved wind vector interpolation in semi-Lagrangian departure point scheme (IFS-321)
- New Mie-tables generated by using permittivity model (Rosenkranz15) (IFS-406)
- New SL scheme options, optimizations and various fixes (IFS-588)
- OOPS (IFS-285)
- OOPS : enable inter-channel error correlations in OOPS-IFS R object (IFS-289)
- OOPS: use consistent interpolation in traj and min steps (IFS-432)
- Preparation for Metop-C IASI & NOAA-20 CrIS (IFS-440)
- Prepare for future GEO instruments (IFS-300)
- Refinements to Surface analysis only configuration of an (LSSAONLY) (IFS-490)
- Revive simulated satellite imagery in space view (IFS-693)
- Slim EDA optimisation, 50 member EDA (IFS-517)
- Surface analysis for 46r1: EDA Jacobians and SMOS neural network assimilation (IFS-369)
- Surface analysis for 46r1: bit-identical changes (IFS-498)
- The wave_save script references a possibly undefined variable (IFS-623)
- Updated sujbwavwri giving good adjoint test (IFS-742)
- Upgrade of the augmented control variable (IFS-296)
- Use the EDA in the SEKF to compute the Jacobians (IFS-368)
- add SSMIS-F17 150 h GHz and GMI 166 v/h GHz (IFS-309)
- bug fix in screen level (rh2m) analysis (IFS-620)
- change date checks and scripts so that fsobs works at 46r1 (IFS-645)
- chem_ic dir per EDA member (IFS-475)

Olivier Marsden, Deborah Salmond, Mats Hamrud - daom_CY46_OOPS_V12 - NON-METEOROLOGICAL

OOPS (IFS-285)

OOPS for 4D-Var

Files modified (AEOLUS): `tentispectrum.F90`

Files modified (ALGOR): `fft992.F90 sgtsl.F90 m1qn3.F90 m1qn3r.F90 hqr2.F90 mxva.F90`

sgemmx.F sgemmx.F90 ctcab_1dv.F90 ctonb_1dv.F90 dd.F90 dd_1dv.F90 ddr.F90 dds.F90 dds_1dv.F90 ddsr.F90 ecube.F90 ecube_1dv.F90 ecuber.F90 euclid.F90 euclid_1dv.F90 m1qn3a.F90 m1qn3ar.F90 mlis0.F90 mlis0r.F90 mupdts_1dv.F90 mupdts_orig.F90 mupdtsr.F90 ystbl_1dv.F90 ystbl_orig.F90 ystblr.F90 butterfly_alg_mod.F90 dilatation_mod.F90 interpol_decomp_mod.F90 seefmm_mix.F90

Files modified (CMAKE): add_symlink.cmake aeolus.cmake algor.cmake autopromote.cmake bl.cmake compile_flags.cmake crm.cmake dummy.cmake ecfftw.cmake enkf.cmake fieldman.cmake ifs.cmake ifsaux.cmake mpi_serial.cmake obstat.cmake odbport.cmake patch_ifs_rsp.cmake prepdata.cmake radiation.cmake satrad.cmake scat.cmake ssa.cmake surf.cmake trans.cmake wam.cmake

Files modified (DUMMY): wavemdl.F wvalloc.F wvdealloc.F wvwamdecomp.F wvwaminit.F wvwaminit1.F

Files modified (ECFFTW): tpm_fftw.F90

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90 state_geometry.F90 master_enkf.F90 oper_ens.F90

Files modified (FIELDMAN): CMakeLists.txt

Files modified (IFS): call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90 cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpg.F90 cpg2.F90 cpg25.F90 cpg2ad.F90 cpg2lag.F90 cpg2lagad.F cpg2lagtl.F90 cpg2tl.F90 cpg5_gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_gp.F90 cpg_gp_hyd.F90 cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpglag.F90 cpglagad.F90 cpglagtl.F90 cppsolan.F90 fv_gradient.F90 gp_derivatives.F90 gpcty_forc.F90 gprcp.F90 gptf2pc.F90 gpxx.F90 lacdyn.F90 lacdynshw.F90 lacdynshwad.F90 lacdynshwtl.F90 lanhsib.F90 larche.F90 larcin2.F90 larcin2ad.F90 larcina.F90 larcinaad.F90 larcinbad.F90 larcinha.F90 larmes.F90 latte_bbc.F90 lattes.F90 lattesad.F90 lattestl.F90 lattex.F90 lattex_dnt.F90 lattex_dnt_ad.F90 lavabo.F90 lavent.F90 laventad.F90 laventtl.F90 postphy.F90 spchor.F90 spcmascor.F90 cseaice.F90 csstbld.F90 incli10.F90 caclsst.F90 caeincw.F90 cagade.F90 calico.F90 can1.F90 canari.F90 caohis.F90 capito.F90 carcli.F90 acch_csrv.F90 chem_bascoe.F90 chem_bascoetm5.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90 chem_n2o.F90 chem_tm5.F90 mocage_chem_ini.F90 mocage_elem_racmobus.F90 mocage_equi_racmobus.F90 mocage_hana.F90 mocage_hden.F90 mocage_hete.F90 mocage_hsed.F90 mocage_krat_racmobus.F90 mocage_nebj.F90 mocage_phot.F90 mocage_sola.F90 mocage_soufreaq.F90 tm5_calrates.F90 tm5_macc_aerosol.F90 updcoch.F90 updcli.F90 updcli_mse.F90 updclie.F90 updclie_co2.F90 updclie_compo.F90 updcpl.F90 updnemoocean.F90 updnud.F90 updo3ch.F90 updrgas.F90 ctxgetdb.F90 ctxinitdb.F90 ctxputdb.F90 getdb.F90 init_odbtools.F90 initmdb.F90 matchupdb.F90 obs_sort_odb.F90 opendb.F90 revmatchupdb.F90 shuffle_odb.F90 update_desc.F90 update_obsdb.F90 yomdb_defs.h yomdb_vars.h adjotest.F90 allfpos.F90 cfcsens2obs.F90 cgr1.F90 cnt0.F90 cnt1.F90 cnt2.F90 cnt3.F90 cnt3_glo.F90 cnt3_wait.F90 cnt3ad.F90 cnt3tl.F90 cnt4.F90 cnt4ad.F90 cnt4tl.F90 cprep3.F90 csekf2.F90 cuconvca.F90 cva1.F90 cva2.F90 forecast_error.F90 gmassdiag.F90 gp_model.F90 gp_model_ad.F90 gp_model_heap.F90 gp_model_heap2.F90 gp_model_tl.F90 iopack.F90 qmfixer2.F90 scan2m.F90 scan2mad.F90 scan2mtl.F90 sim4d.F90 spcm.F90 stepo.F90 stepoad.F90 stepotl.F90 testlievol.F90 trmfixers.F90 dfi2.F90 dfi2mod.F90 dfi3.F90 reast.F90 chkevo.F90 cpcfu.F90 cpcuddh.F90 cpcuddh_omp.F90

cpdyddh.F90 cpdyddhlag.F90 cpphddh.F90 cpphddhe.F90 fpgpnorm.F90 grib_code_-
message.F90 inifaoutinfo.F90 posddh.F90 ppeddh.F90 ppeddhec.F90 ppsydh.F90
preset_grib_template.F90 satsim.F90 spmcuf.F90 spnorm.F90 spnormb.F90 suecfname.F90
sunddh.F90 suppdate.F90 wrmlppa.F90 wrmlppg.F90 wrmlpplg.F90 wroutgpgb.F90
wroutspgb.F90 fp_serv_suiosctmpl.F90 fp_serv_sync.F90 cpfpfilter.F90 fpcincape.F90
fullpos_drv.F90 hpos.F90 su4fpos.F90 subfpos.F90 sufpfields.F90 sufpgeometry.F90
sufpgrib.F90 sufpphy.F90 sumpfpos.F90 wrmlfp.F90 wrmlfp_io_serv.F90 wrplfp.F90
wrplfp_io_serv.F90 fcttim.func.h fcvdfs.func.h gbrad_obsop.F90 gbrad_obsop_-
tl.F90 laiddi_rad.F90 laiddiobs.F90 laiddiobsad.F90 laidli_rad.F90 laidlic.F90
laidlicad.F90 laidliobs.F90 laidliobsad.F90 laitli.F90 laitri.F90 lascaw.F90
lascawad.F90 lascawtl.F90 rdscaw.F90 slcomm.F90 slcomm2.F90 slcomm2a.F90 slcomm_-
obs.F90 slextpol_obs.F90 slextpolad_obs.F90 suhslmer.F90 io_serv_hdr1_init.F90
io_serv_map_recv_part1.F90 io_serv_map_send_part1.F90 io_serv_sync.F90 io_-
serv_writefld_ec.F90 algorithm_state_mod.F90 coupling.F90 cplng_exchange_-
mod.F90 date_helpers.F90 datetime_ifs_mod.F90 datetime_tmp_mod.F90 datetime_-
tmp_mod.F90_toberemoved duration_ifs_mod.F90 ec_phys_fields_mod.F90 field_-
container_gp_mod.F90 field_container_oper_mod.F90 field_definitions.F90 field_-
gfl_wrapper.F90 fields_base_mod.F90 fields_mod.F90 geometry_mod.F90 geometry_-
setup_mod.F90 gfl_subs_mod.F90 gom_mod.F90 gom_plus.F90 grib_handles_mod.F90
grib_utils_mod.F90 ifs_dbase_view_mod.F90 ifsobs_schema_mod.F90 iogride_mod.F90
iogridoe_mod.F90 iogridue_mod.F90 iostream_mix.F90 jb_control_vectors_mod.F90
jb_control_vectors_oper_mod.F90 jb_control_vectors_para_mod.F90 jo_table_-
mod.F90 larche_hlp.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90 model_-
mod.F90 odb_the_obscure.F90 par_gfl.F90 parfpos.F90 radiation_ifs_rrtm.F90
radiation_setup.F90 sats_mix.F90 stoph_mix.F90 supergom_class.F90 surface_-
fields_mix.F90 tovscv_bgc_mod.F90 tovscv_mod.F90 traj_global_mod.F90 traj_-
main_mod.F90 traj_main_mod_oops.F90 traj_semilag_mod_oops.F90 traj_surface_-
mod_oops.F90 trajectory_mod.F90 trajectory_mod_oops.F90 type_geometry.F90 varbc_-
class.F90 varbc_eval.F90 varbc_rad.F90 varbc_setup.F90 varbc_to3.F90 yoe_-
cuconvca.F90 yoe_phys_mwave.F90 yoeaeratm.F90 yoeaermap.F90 yoeaerop.F90 yoeaersnk.F9
yoeaersrc.F90 yoephy.F90 yom_grib_codes.F90 yom_ygfl.F90 yomaerdet.F90 yomafn.F90
yomcompo.F90 yomcosjo.F90 yomcsgeom.F90 yomcst.F90 yomct0.F90 yomct3.F90 yomdyncore.F
yomgrib.F90 yomgsgeom.F90 yomgwdiag.F90 yomhslmer.F90 yommcc.F90 yommp0.F90
yommwave.F90 yomphyder.F90 yomppc.F90 yomprad.F90 yomrip.F90 yomrip0.F90 yomsekf.F90
yomspjb.F90 yomtraj_oops.F90 yomvar.F90 yomvert.F90 mwave_emis.F90 mwave_-
put.F90 mwave_setup.F90 naeaer.nam.h naephy.nam.h naevol.nam.h namaerdet.nam.h
namafn.nam.h namcompo.nam.h namcosjo.nam.h namdyncore.nam.h namgfl.nam.h nampar1.nam.
namsekf.nam.h namtraj.nam.h namvar.nam.h ininemo.F90 aerosol_detect_setup.F90
black.F90 comtc.F90 decis.F90 defrun.F90 gefger.F90 inifger.F90 level1cgeos_-
ob.F90 new_thinn.F90 obadat.F90 obsgen.F90 pre_thinner.F90 rd_obs_boxes.F90
screen.F90 screen_timeslot.F90 sekf_prep_ascat.F90 setup_tovscv.F90 suobs.F90
suobscor.F90 thin_red_presort.F90 updobs.F90 wrcoe.F90 wrcom.F90 wrcpl.F90
allobs_bias_error_mod.F90 allobs_error_mod.F90 allobs_oper_mod.F90 error_-
covariance_3d_mod.F90 error_covariance_param_mod.F90 fields_interp_mod.F90
fields_io_mod.F90 ifs_init.F90 locations_mod.F90 obsvec_mod.F90 scan2m_oops.F90
scan2mad_oops.F90 scan2mtl_oops.F90 stepo_oops.F90 stepo_oops_traj.F90 stepoad_-
oops.F90 stepotl_oops.F90 stepotl_traj_oops.F90 varbc_cov_mod.F90 varbc_ctlvec_-
mod.F90 varbc_increment_mod.F90 varbc_state_mod.F90 aer_lidsimad.F90 aer_-

lidsimop.F90 aer_lidsimtl.F90 aerosol_detect.F90 aod_ad.F90 aod_dualcv_ad.F90
aod_dualcv_op.F90 aod_dualcv_tl.F90 aod_op.F90 aod_tl.F90 calc_varqc_weights.F90
co2slicing.F90 co2slicing_ml.F90 cobs.F90 cobsad.F90 cobsall.F90 cobsallad.F90
cobsalltl.F90 cod_optl.F90 departure_jo.F90 departure_joad.F90 departure_-
jotl.F90 hdepart.F90 hinth.F90 hjo.F90 hop.F90 hop_decide_required_sqls.F90
hqscatt.F90 hradp_ml.F90 hradp_ml_tl.F90 hretr_rad.F90 obscor_sumup_scalp.F90
obsop_conv.F90 obsop_precip_accum.F90 obsop_rad.F90 obsop_varbc.F90 obsv.F90
obsvad.F90 obsvtl.F90 rad1cemis.F90 radtr_ml.F90 rao_ad.F90 rao_op.F90 rao_-
tl.F90 select_closest_scatt.F90 slint.F90 slintad.F90 write_spec.F90 write_-
spec_grib.F90 write_spec_traj.F90 accvud.F90 acdifoz.F90 acdifus.F90 acmtud.F90
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cucalln.F90 cucalln2.F90 cucalln2ad.F90 cucalln2tl.F90 cuccdiaad.F90 cuccdiatl.F90
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tl.F90 ec_phys_lslphy.F90 ec_phys_tl.F90 fireinj.F90 gems_init.F90 gems_init_-
ad.F90 gems_init_tl.F90 gems_tend.F90 gems_tend_ad.F90 gems_tend_tl.F90 ghg_-
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gwsetuptl.F90 heldsuarez.F90 liftemis.F90 local_state_ini.F90 m7_delcoa.F90
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layer.F90 store_traj_phys_layer.F90 su_aerm7.F90 su_aerop.F90 su_aerp.F90 su_-
aerv.F90 su_aervole.F90 su_aerw.F90 su_ghgclim.F90 suaerh.F90 sucldp.F90 suclopn.F90
sucumf.F90 sucumf2.F90 suecaec.F90 suecozv.F90 sugwwms.F90 suphec.F90 suphli.F90
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suvdf.F90 suvdfs.F90 suwcou.F90 turbulence_layer.F90 turbulence_s_layer.F90

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kgb1.F90 srtm_kgb16.F90 su_c11clim.F90 su_c12clim.F90 su_c22clim.F90 su_ccl4clim.F90
su_ch4clim.F90 su_co2clim.F90 su_gch4clim.F90 su_gco2clim.F90 su_gozoclim.F90
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gflattr.F90 sudcmip12_spec.F90 sudcmip16_gu.F90 sudcmip16_spec.F90 sudefo_-
gflattr.F90 sudim.F90 sudyncore.F90 sufpinif.F90 sugem2.F90 sugem_naml.F90
sugfl1.F90 sugfl2.F90 sugfl3.F90 sugrclia.F90 sugrib.F90 sugridua_map_part1.F90
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nalan1.F90 opk.F90 wrtllcz.F90 wrtsv.F90 smos_process.F90 smos_update.F90 legtri.F90
relaxgp.F90 transinv_mdl.F90 transinv_mdlad.F90 addbgs.F90 deallo.F90 dealsc2.F90
dverint.F90 forecast_days_calc.F90 interp_gp.F90 mod_ini.F90 opdis.F90 openfa.F90
openfainfo.F90 prtime.F90 reset_accfie_vareps.F90 save_evecs.F90 save_test4dinc.F90
savmoderr.F90 tsl.F90 updmoon.F90 updrlxref.F90 updtim.F90 updtim_additional.F90
verint.F90 write_ctlvec_grib.F90 write_grid_grib.F90 write_grid_traj.F90 write_-
wavelet_initcv_grib.F90 wrresf.F90 add_moderr_tl.F90 adtest.F90 bgpert.F90
bgvecs.F90 chavar.F90 chavarad.F90 chavarin.F90 chavarinad.F90 chkobtim.F90
coptra.F90 cosjc.F90 cosjr.F90 djbdy.F90 estsig.F90 evcost.F90 getmini.F90
getsatid.F90 grtest.F90 jbtomodel.F90 jbtomodelad.F90 litest.F90 pregprh.F90
rdfpinc.F90 read_surfgrid_traj.F90 savmini.F90 setqccma.F90 setran.F90 suecges.F90
suinfce.F90 suinrenormfce.F90 suiomi.F90 sujb.F90 sujbtest.F90 sujbwavelet.F90
sujbwavelet_stdevs.F90 sujbwavtrans.F90 sumoderr.F90 supert.F90 suscal.F90
suvar.F90 suvazx.F90 suvifce.F90 taskob.F90 taskobtl.F90 tlprop.F90 tltest.F90
upspec.F90 writelct.F90 writeoba.F90 writesd.F90 writestd.F90 xformev.F90

Files modified (IFSAUX): oldbufr_close.F90 oldbufr_open.F oldbufr_open.F90 oldbufr_-
read.F90 oldbufr_rewind.F90 oldbufr_write.F90 oldcma_close.F90 oldcma_get_-
address.F90 oldcma_open.F90 oldcma_read.F90 oldcma_rewind.F90 oldcma_set_-
address.F90 oldcma_write.F90 n_compat.F90 uv2sd.F90 ellips.F90 ellips64.F90
falais.F90 fareor.F90 codega.F90 confi.F90 confp_mf.F90 decfp_mf.F90 decoga.F90
gbyte_mf.F90 gbytes_mf.F90 gsbite_mf.F90 gsbyte_mf.F90 mxmn_mf.F90 offset_-
mf.F90 packgb.F90 prtbin_mf.F90 sbyte_mf.F90 sbytes_mf.F90 unpagb.F unpagb.F90
abor1.intfb.h cas.h drhook.h crm.F90 optbadcv.F90 optd.F90 opteff.F90 opterror.F90

optgee.F90 optmccpa.F90 optremez.F90 optwate.F90 deallocate_if_associated_-
mod.F90 mpl_abort_mod.F90 parkind1.F90 parkind_wave.F90 sha256_wrapper.F90
yomabrt.F90 coml_binding.F90 run_fortran_omp_parallel.F90 transforms4py.F90
abor1.F90 cargs.c drhook.c env.c cxxdemangle.cc ec_meminfo.F90 get_tcmalloc_-
info.c getcurheap.c gethwm.c linuxtrbk.c mpi_version.c omp_version.c reserve_-
hugepages.c tabort.c

Files modified (IFSOBS): CMakeLists.txt hdf5_file_mod.F90 ascii_dbase_mod.F90 dbase_-
mod.F90 hdf_dbase_mod.F90 ifsobs_dbase_mod.F90 netcdf_dbase_mod.F90 odb1_-
dbase_mod.F90 odb2_dbase_mod.F90 odbserver_dbase_mod.F90 dbase_view_mod.F90
dbase_view_tree_mod.F90

Files modified (MPI_SERIAL): mpi_finalized.F mpi_reduce.F mpi_type_commit.F mpi_-
type_create_indexed_block.F mpi_type_free.F mpi_waitany.F mpif.h

Files modified (NEMO): CMakeLists.txt mppallgatherv.F90 CMakeLists.txt CMakeCCompiler.cmake
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_-
C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin
CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompile
a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_-
tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user
README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_-
Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake
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flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake
CMakeLists.txt TestErrorCovariance.cc TestGeometry.cc TestIncrement.cc TestLinearMode
TestLocations.cc TestObsErrorCovariance.cc TestObservationSpace.cc TestObservationVec
TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc
AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90
AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovaria
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IncrementNV.cc IncrementNV.h LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc
LocalizationMatrixNV.h LocationsNV.cc LocationsNV.h LocationsNV.interface.F90
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sup.F90 dif_sup.F90 dif_ten.F90 sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_-
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inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90 ens_ten.F90 ens_typ.F90
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num.F90 sol.F90 sol_def.F90 sol.F90 sol_def.F90 tam_tra_adv.F90 tam_tra_adv_-
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inner.F90 nemovar_inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_-
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mod_error_msg.F90 mod_field.F90 mod_field.f90 mod_field_attribute.F90 mod_-
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file.f90 mod_file_attribut.F90 mod_file_definition.F90 mod_file_group.F90 mod_-
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function.F90 test_xmlio.F90 xmlio.F90 CfgFile.pm ConfigSystem.pm parinter.F90
scripremap.F90 iom_nf90.F90 lib_mpp.F90 lib_mpp_def.F90 ddatetoymdhms.h90 diaobs.F90
greg2jul.h90 jul2greg.h90 obs_fbm.F90 obs_read_seaice.F90 obs_read_sst.F90
tamtrj.F90 step.F90 diaprod.F90 parinter.F90 lib_mpp.F90 ddatetoymdhms.h90
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F arch_configuration
arch_keys_Cray.cmake arch_keys_GNU.cmake arch_keys_PGI.cmake compiler_flags.cmake
compiler_flags_Cray_Fortran.cmake compiler_flags_PGI_Fortran.cmake tools_-
configuration.cmake tools_keys_PGI.cmake fcmcmake.ksh cce.xc30 nemo.cfg nemo.cfg
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gnu.colfax nemo.cfg nemo.cfg gnu.linux.cb nemo.cfg nemo.cfg nemo.cfg nemo.cfg
nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg intel.lxg.cb nemo.cfg
nemo.cfg intel.xc30 nemo.cfg nemo.cfg nemo.cfg intelmkl.xc30 nemo.cfg intelmkl.xc40
nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90
ddatetoymdhms.h90 greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90
fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): mod_obstat_plot.F90 mod_sat_monitor.F90 obstat_def.F90 sat_-
324_hist_plot.F90

Files modified (ODB): CMakeLists.txt b2o_convert.F90 b2o_convert_aeolus.F90 b2o_-
convert_asr.F90 b2o_convert_atms.F90 b2o_convert_atovs.F90 b2o_convert_fy3.F90
b2o_convert_grad.F90 b2o_convert_msg.F90 b2o_convert_rain_gauges.F90 b2o_-
convert_rain_rates.F90 b2o_convert_satob.F90 get_varindex.F90 scat_ambig_-
select.sql scat_ambig_select.sql sufger_aeolus.sql aeolus.h cma.h links_aeolus_-
hdr.sql radiance.h sat.h satbody_atovs.sql scat_ambig_select.sql scatt.h sufger_-
aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h
timerdefs.func.h b2o_accessor_compressed.F90 b2o_common.F90 b2o_functional.F90
b2o_thinning_heap.F90 datetimemod_aeol.F90 varindex_module.F90 fcqodb_solverif.F90
bator_init_mod.F90 create_ioassign CMakeLists.txt DUMMY.IOASSIGN DUMMY.dd DUMMY.sch
an_depar.cmap date.cmap dir.cmap fg_depar.cmap modoro.cmap obstype.cmap oldwind.cmap
press.cmap press_hpa.cmap procid.cmap ps.cmap ps_hpa.cmap rtablel_2031 rtablel_-
2047 rtablel_2063 rtablel_2095 rtablel_21023 rtablel_21151 rtablel_2127 rtablel_-
21279 rtablel_2159 rtablel_22047 rtablel_2215 rtablel_2255 rtablel_2319 rtablel_-
2399 rtablel_2511 rtablel_2639 rtablel_2799 stalt.cmap status.cmap t.cmap t2m.cmap
target.cmap tbr.cmap tcelsius.cmap tfahrenheit.cmap time.cmap tslot.cmap wind.cmap
Merge_gmi_swaths.F90 Odb2_to_odb1_era.F90

Files modified (OOPSIFS): CMakeLists.txt ifs4dvar.cc AllObs.cc AllObs.h AllObs.interface.F90
AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovariance.interface.F90
AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc

AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt FieldsIFS.cc FieldsIFS.interface
GeometryIFS.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrModCtlVecIFS.cc
IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.F90 LinearModelIFS.cc LinearModelIFS.in
Logbook.interface.F90 LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h
ModelIFS.interface.F90 ObsBias.cc ObsBias.h ObsBias.interface.F90 ObsBias2.interface.
ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.interface.F90 ObsBiasCovar
ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVec.cc ObsBiasCtlVec.h ObsBiasCtlVec.interface.F90 ObsBiasCtlVec2.interface
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90
ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen
ObsBiasIncrementTOVSCV.cc ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F
ObsBiasIncrementVARBC.cc ObsBiasIncrementVARBC.h ObsBiasIncrementVARBC.interface.F90
ObsBiasLLists.F90 ObsBiasLLists2.F90 ObsBiasLListsTOVSCV.F90 ObsBiasLListsVARBC.F90
ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90 ObsBiasVARBC.cc
ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsVector.cc ObsVector.interface.F90
StateIFS.cc StateIFS.h instantiateObsAuxFactories.h instantiateObsErrorFactory.h
instantiateObsOpFactories.h pm_link_mod.F90 pm_linked_list_mod.F90 test.xml

Files modified (PREPDATA): svsp2gp.F90 eppes.F90 eppes_ini_vars.F90 eppes_version.h
fielddef.F90 mcmcprec.F90 mcmcrand.F90 svgg.F90 GH_RH.F90 Wavelet_Filter_-
IBM.F90 cinterpol.F90 genlatmu.F90 getclimo3.F90 restbl.F90 sptogp.F90 unbal_-
eda.F90 vod2uv.F90

Files modified (RADIATION): radiation_aerosol_optics.F90 radiation_cloud_generator.F90
radiation_config.F90 radiation_delta_eddington.h radiation_mcica_lw.F90 radiation_-
mcica_sw.F90

Files modified (SATRAD): cmem_init.F90 getcparam.h bufr_grid_screen_keep.F90 mod_-
cparam.F90 mod_screen_1c_bufrmsg.F90 mod_screen_1c_config.F90 mod_screen_-
1c_constants.F90 mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 antenna_correct.F90 bufr_-
grid_screen.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 bufr_screen_-
synop_rain_gauges.F90 gensatim.F90 old_screen_1c.F90 screen_1c.F90 rtlimb_-
hat.F90 rtlimb_hat_ad.F90 rtlimb_hat_tl.F90 rttov_read_ascii_sccldcoef.F90
rttov_read_coefs.F90 co2cld.F90 getcparam.F90 phrtsetup.F90 rttov_ec.F90 rttov_-
ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_-
ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (SCMEC): trans_inq.F90 trans_inq.h su0yom1c.F90

Files modified (SSA): ssa.F90

Files modified (SURF): fcsvdfs.h cce-optS.cfg gnu-optS.cfg flake_driver_mod.F90 flakeene_-
mod.F90 flakerad_mod.F90 sppcfl_mod.F90 sppgust_mod.F90 srfsn_vgrid_mod.F90
surftstp_ctl_mod.F90 suscst_mod.F90 susflake_mod.F90 suvexcs_mod.F90 vexcs_-
mod.F90 vupdz0_mod.F90 yos_flake.F90 parkind1.F90 suvdfs.F90 fcvdfs.h

Files modified (TRANS): setup_trans.F90 trans_inq.F90 setup_trans.h trans_inq.h dealloc_-
resol_mod.F90 dist_grid_ctl_mod.F90 ftinv_ctl_mod.F90 ledir_mod.F90 leinv_-

mod.F90 ltinv_ctl_mod.F90 setup_geom_mod.F90 suleg_mod.F90 supolf_mod.F90 tpm_-
fields.F90 tpm_geometry.F90 rgrid.F90

Files modified (WAM): uras3a.F abort1.F airsea.F altas.F90 bouinpt.F bouint.F buildstress.F
cal_second_order_spec.F check.F checkcfl.F chief.F cimsstrn.F cireduce.F class_-
wgrib.F closend.F combinepeaks.F cpfdb.F ctuw.F current2wam.F decode_point_-
spectra.F difdate.F ersfile.F file_transfer.F fillgaps.F fld2wam.F fndprt.F
fwsea.F gapinterpol.F getcurr.F getspec.F getstress.F getwnd.F getwspec.F grdata.F
grfield.F90 grib2wgrid.F grstname.F gsfile_new.F halfspread.F headbc.F ifstowam.F
implsch.F incdate.F inisnonlin.F init_fieldg.F init_x0tauhf.F initialint.F
initmdl.F initnemocpl.F intpol.F intspec.F intwaminput.F inwgrib.F kerkei.F
kurtosis.F lasttwobins.F lowenergy.F makeframes.F makegrid.F mblock.F mbounc.F
mbounf.F mboxb.F mcout.F meansqs.F mgrid.F mpabort.F mpbcastgrid.F mpbcastintfld.F
mpbcastsarin.F mpdecomp.F mpgatherbc.F mpgatherersfile.F mpgathergrdfld.F mpgatherspp
mpuserin.F mstart.F mswell.F90 mubuf.F newwind.F nlweigt.F notim.F oifield.F
optint.F out_onegrdpt.F outbc.F outbs.F outcom.F outers.F outgrid.F outint.F
outnam.F outspp.F outwnorm.F outwspec.F partitioning.F preproc.F preset.F preset_-
wgrib_template.F prewind.F propag_wam.F propags.F propags1.F propags2.F propdot.F
readbou.F readcur.F readfl.F readpre.F readsarspec.F readsat.F readsta.F readstress.F
readwgrib.F readwind.F rearrngsar.F recvnemofields.F resize_gap_array.F resize_-
getwspec.F rfl4wam.F90 runwam.F saras.F savrest.F savspec.F savstress.F sdissip.F90
secondhh.F secondhh_gen.F sep3tr.F sepwisw.F setmarstype.F sinput.F90 sinput_-
ard.F90 sinput_jan.F spectra.F stokesdrift.F stresso.F swellsep.F tabu_swellft.F
tauhf.F threshhold.F timin.F topoar.F tustreas.F uibou.F uiprep.F unblkrord.F
unsetice.F update.F updatewd.F userin.F wam2odb.F90 wam_syminv.F wam_time_-
routines.F90 wamassi.F wamodel.F wamoi.F wavemdl.F wdfluxes.F wdirspread.F
wgrib2fdb.F wgribencode.F wgribenout.F wgribout.F windsea.F wposnam.F write_-
currents.F write_mpdecomp.F writefl.F writestress.F wvwamdecomp.F wvwaminit.F
_pe2set.intfb.h _set2pe.intfb.h abort1.intfb.h adjust.intfb.h airsea.intfb.h
aki.intfb.h aki_ice.intfb.h altas.intfb.h avoidpeaks.intfb.h betadef.intfb.h
bouinpt.intfb.h buildstress.intfb.h cal_second_order_spec.intfb.h check.intfb.h
checkcfl.intfb.h chesig.intfb.h cigetdeac.intfb.h cimsstrn.intfb.h cireduce.intfb.h
ciwabr.intfb.h ciwaf.intfb.h class_wgrib.intfb.h clean_outbs.intfb.h closend.intfb.h
combinepeaks.intfb.h command.intfb.h confile.intfb.h crossas.intfb.h crossw.intfb.h
ctuw.intfb.h current2wam.intfb.h dev.intfb.h difdate.intfb.h docombine.intfb.h
dotdc.intfb.h ersfile.intfb.h expand_string.intfb.h fdur.intfb.h femean.intfb.h
femeanws.intfb.h file_transfer.intfb.h fillgaps.intfb.h findb.intfb.h fkmean.intfb.h
fld2wam.intfb.h fldinter.intfb.h fndprt.intfb.h frcutindex.intfb.h fustar.intfb.h
fwsea.intfb.h gapinterpol.intfb.h getcurr.intfb.h getspec.intfb.h getstress.intfb.h
getwnd.intfb.h getwspec.intfb.h gradi.intfb.h grdata.intfb.h grfield.intfb.h
grib2wgrid.intfb.h grstname.intfb.h gsfile_new.intfb.h h_max.intfb.h halfspread.intfb
headbc.intfb.h ifstowam.intfb.h implsch.intfb.h incdate.intfb.h inisnonlin.intfb.h
init_fieldg.intfb.h init_sdiss_ardh.intfb.h init_x0tauhf.intfb.h initialint.intfb.h
initmdl.intfb.h initnemocpl.intfb.h iniwcst.intfb.h intpol.intfb.h intspec.intfb.h
inwgrib.intfb.h jafu.intfb.h jonswap.intfb.h kerkei.intfb.h kgribsize.intfb.h
kurtosis.intfb.h kzeone.intfb.h lasttwobins.intfb.h llalloc_grdfld.intfb.h
loc2glo.intfb.h lowenergy.intfb.h makeframes.intfb.h makegrid.intfb.h mblock.intfb.h
mbounc.intfb.h mbounf.intfb.h mboxb.intfb.h mcout.intfb.h means.intfb.h meansqs.intfb

mergesarcor.intfb.h mfredir.intfb.h mgrid.intfb.h micep.intfb.h mintf.intfb.h
mnintw.intfb.h mpabort.intfb.h mpbcastgrdfld.intfb.h mpbcastgrid.intfb.h mpbcastintfl
mpbcastsarin.intfb.h mpbcastscfld.intfb.h mpclose_unit.intfb.h mpcrtbl.intfb.h
mpdecomp.intfb.h mpdistribfl.intfb.h mpdistribscfld.intfb.h mpexchng.intfb.h
mpexchngsarin.intfb.h mpfldtoifs.intfb.h mpgatherbc.intfb.h mpgatherersfile.intfb.h
mpgatherfl.intfb.h mpgathergrdfld.intfb.h mpgatherscfld.intfb.h mpgatherspp.intfb.h
mpmdl4alt.intfb.h mppewithindist.intfb.h mpuserin.intfb.h mstart.intfb.h mswell.intfb
mtabs.intfb.h mubuf.intfb.h mwp1.intfb.h mwp2.intfb.h newwind.intfb.h nlweigt.intfb.h
notim.intfb.h oifield.intfb.h onestepapart.intfb.h optint.intfb.h out_onegrdpt.intfb.
out_onegrdpt_sp.intfb.h outbc.intfb.h outbeta.intfb.h outbs.intfb.h outcom.intfb.h
outers.intfb.h outgrid.intfb.h outint.intfb.h outnam.intfb.h outpp.intfb.h
outspp.intfb.h outunwamfield.intfb.h outunwamtest.intfb.h outwnorm.intfb.h
outwspec.intfb.h outxt.intfb.h packi.intfb.h packr.intfb.h parmean.intfb.h
partitioning.intfb.h peak.intfb.h peak_freq.intfb.h peakfri.intfb.h preset_-
wgrib_template.intfb.h prewind.intfb.h propag_wam.intfb.h propags.intfb.h propags1.in
propags2.intfb.h propdot.intfb.h prspp.intfb.h prspps.intfb.h readbou.intfb.h
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recvnemofields.intfb.h resize_gap_array.intfb.h resize_getwspec.intfb.h resize_-
sarinput.intfb.h rotspec.intfb.h runwam.intfb.h saras.intfb.h savrest.intfb.h
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sdissip_ard.intfb.h sdissip_jan.intfb.h sdiwbk.intfb.h se10mean.intfb.h sebtmean.intf
second_order_lib.intfb.h secondhh.intfb.h secondhh_gen.intfb.h secspom.intfb.h
semean.intfb.h sep3tr.intfb.h sepwisw.intfb.h set_wflags.intfb.h setice.intfb.h
setmarstype.intfb.h setwmask.intfb.h sinput.intfb.h sinput_ard.intfb.h sinput_-
jan.intfb.h skewness.intfb.h smoothsarspec.intfb.h snonlin.intfb.h spectra.intfb.h
spr.intfb.h sthq.intfb.h stokesdrift.intfb.h stress.intfb.h stresso.intfb.h
strspec.intfb.h sumenergy.intfb.h swellsep.intfb.h tables_2nd.intfb.h tabu_-
swellft.intfb.h tau_phi_hf.intfb.h tauhf.intfb.h taut_z0.intfb.h threshhold.intfb.h
timin.intfb.h topoar.intfb.h transf.intfb.h transf2.intfb.h transmeans.intfb.h
transpart.intfb.h tustreas.intfb.h uibou.intfb.h uiprep.intfb.h unblkrord.intfb.h
unsetice.intfb.h update.intfb.h updatewd.intfb.h updnemofields.intfb.h updnemostress.
upwspec.intfb.h userin.intfb.h vmin.intfb.h vmin_d.intfb.h vplus.intfb.h vplus_-
d.intfb.h wam2odb.intfb.h wam_syminv.intfb.h wam_time_routines.intfb.h wam_-
u2l1cr.intfb.h wam_user_clock.intfb.h wamadszidl.intfb.h wamassi.intfb.h wamcur.intfb
wamendnemoio.intfb.h wamininemoio.intfb.h wamnorm.intfb.h wamodel.intfb.h wamoi.intfb
wamwnd.intfb.h wavemdl.intfb.h wdfluxes.intfb.h wdirspread.intfb.h weflux.intfb.h
wgrib2fdb.intfb.h wgribencode.intfb.h wgribenout.intfb.h wgribout.intfb.h windsea.int
wnfluxes.intfb.h wposnam.intfb.h writefl.intfb.h writestress.intfb.h writsta.intfb.h
wrong_wnfluxes.intfb.h wsigstar.intfb.h wsmfen.intfb.h wstream_strg.intfb.h
wvalloc.intfb.h wvdealloc.intfb.h wvfricvelo.intfb.h wvwamdecomp.intfb.h wvwaminit.in
wvwaminit1.intfb.h z0wave.intfb.h parkind_wave.F90 yownemop.F yowsarinv.F yowunpool.F

Peter Lean - dipl_CY45_OOPS_interchan - BIT IDENTICAL

OOPS : enable inter-channel error correlations in OOPS-IFS R object (IFS-289)

The current OOPS-IFS implementation of the R object is diagonal. To enable the representation of inter-channel error correlations, the OOPS-IFS R object needs to be upgraded.

The observation error correlation files are read in by the R constructor. Each observation in the R object is then assigned a correlation type (e.g. uncorrelated, or correlated, and if so which correlation matrix to use).

The inverse_multiply() subroutine then uses a Cholesky decomposition to provide the results of Rˆ-1 .dy (as is done in the current IFS implementation).

Note: these changes only handle correlations within a single observation report and do not allow spatial or temporal error correlations.

Files modified (IFS): call_sl.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpglag.F90 cpmvvps.F90 cttotvad.F90 cttotvtl.F90 gp_derivatives.F90 gpnox.F90 gpnoxad.F90 gprh.F90 lacdyn.F90 larcin2.F90 larcin2ad.F90 larcina.F90 larcinha.F90 latte_-kappa.F90 lavabo.F90 postphy.F90 si_cccor.F90 sidd.F90 siptp.F90 sitnuad.F90 elascaw.intfb.h cadavr.F90 can1.F90 canari.F90 updclie_co2.F90 adjotest.F90 cad1.F90 cfcsens2obs.F90 cgr1.F90 cnt0.F90 cnt1.F90 cnt2.F90 cnt3.F90 cnt3ad.F90 cnt3tl.F90 cnt4.F90 cnt4ad.F90 cnt4tl.F90 cprep1.F90 csekf1.F90 csekf2.F90 ctl1.F90 cva1.F90 cva2.F90 forecast_error.F90 gp_model.F90 gp_model_ad.F90 gp_model_heap.F90 gp_model_stack.F90 gp_model_tl.F90 iopack.F90 reresf.F90 restart_cnt3.F90 scan2m.F90 scan2mad.F90 scan2mtl.F90 sim4d.F90 spcm.F90 stepo.F90 tesadj.F90 testli.F90 testlievol.F90 dfi.F90 dfi2.F90 dfi3.F90 cpdyddh.F90 grib_code_message.F90 ppclose.F90 ppflush.F90 ppopen.F90 ppstat.F90 spmcuf.F90 wrmlppg.F90 wrmlpplg.F90 wrspec.F90 fpiniphy.F90 gridfpos_savefu.F90 hpos.F90 iofpos.F90 predynfpos.F90 sufp_ctl.F90 sufpcuf.F90 lascaw.F90 lascaw_cla.F90 lascaw_cla_ad.F90 lascaw_cla_tl.F90 lascaw_clo.F90 lascaw_clo_ad.F90 lascaw_-clo_tl.F90 lascaw_vintw.F90 lascaw_vintw_ad.F90 lascaw_vintw_tl.F90 slcomm.F90 eint_mod.F90 error_correlations_info_mod.F90 field_container_base_mod.F90 field_-container_gp_mod.F90 field_container_oper_mod.F90 field_container_sp_mod.F90 field_definitions.F90 field_definitions_base.F90 field_gfl_wrapper.F90 fields_-base_mod.F90 fields_mod.F90 fullpos_oops_mod.F90 geometry_mod.F90 geometry_-setup_mod.F90 gfl_subs_mod.F90 gmv_subs_mod.F90 gom_mod.F90 gom_plus.F90 gridpoint_-fields_mix.F90 intdynsl_mod.F90 iogride_mod.F90 iogridoe_mod.F90 iogridue_-mod.F90 iostream_mix.F90 jo_table_mod.F90 model_atmos_ocean_coupling_mod.F90 model_chem_mod.F90 model_diagnostics_mod.F90 model_dynamics_mod.F90 model_-general_conf_mod.F90 model_lam_coupling_mod.F90 model_mod.F90 model_physics_-aerosol_mod.F90 model_physics_ecmwf_mod.F90 model_physics_general_mod.F90 model_-physics_mf_mod.F90 model_physics_radiation_mod.F90 model_physics_simplinear_-mod.F90 model_physics_stochast_mod.F90 obsop_sets.F90 par_gfl.F90 ptrgppc.F90 ptrslb1.F90 ptrslb15.F90 ptrslb2.F90 raddrv_definitions.F90 radiation_setup.F90 spectral_columns_mix.F90 spng_mod.F90 stoph_mix.F90 supergom_class.F90 traj_-global_mod.F90 traj_main_mod.F90 traj_main_mod_oops.F90 traj_physics_mod_-oops.F90 trajectory_mod.F90 trajectory_mod_oops.F90 type_fpfields.F90 type_-geometry.F90 type_model.F90 varbc_allsky.F90 varbc_class.F90 varbc_eval.F90 varbc_pred.F90 varbc_rad.F90 varbc_setup.F90 varbc_tcwv.F90 yoe_cuconvca.F90 yoe_mcica.F90 yoe_uvrad.F90 yoeaeratm.F90 yoeaerd.F90 yoeaerlid.F90 yoeaermap.F90 yoeaersnk.F90 yoeaersrc.F90 yoeaervol.F90 yoecld.F90 yoecldp.F90 yoecnd.F90 yoecumf.F90 yoecumf2.F90 yoegwd.F90 yoegwdwms.F90 yoegwwms.F90 yoelwrad.F90 yoeneur.F90 yoeovlp.F90 yoephli.F90 yoephy.F90 yoerad.F90 yoerdi.F90 yoevdf.F90

yoewcou.F90 yom_grib_codes.F90 yom_ygfl.F90 yomaerd15.F90 yomaneb.F90 yomcom.F90
yomcosjo.F90 yomcou.F90 yomct0.F90 yomcumfs.F90 yomdimf.F90 yomdphy.F90 yomdyn.F90
yomdyna.F90 yomectab.F90 yomgem.F90 yomgfl.F90 yomglobs.F90 yomgpsk.F90 yomgrib.F90
yomio.F90 yomjbchvar.F90 yomjg.F90 yommcc.F90 yommp.F90 yomncl.F90 yomprad.F90
yomradf.F90 yomrcoef.F90 yomrip.F90 yomsats.F90 yomslphy.F90 yomslrep.F90 yomspjb.F90
yomsrftlad.F90 yomtnh.F90 yomtraj.F90 yomtrc.F90 yomwavelet.F90 yophlc.F90
yophnc.F90 naephy.nam.h namcosjo.nam.h namct0.nam.h namdyn.nam.h nampar1.nam.h
comtc.F90 defrun.F90 gefger.F90 pre_prsta.F90 screen.F90 screen_final.F90 screen_-
timeslot.F90 suobs.F90 allobs_error_mod.F90 allobs_oper_mod.F90 cpg_drv_ad_-
oops.F90 cpg_drv_oops.F90 cpg_drv_tl_oops.F90 cpglag_oops.F90 ec_phys_drv_-
ad_oops.F90 ec_phys_drv_oops.F90 ec_phys_drv_tl_oops.F90 error_covariance_-
3d_mod.F90 fields_interp_mod.F90 fields_io_mod.F90 fields_write.F90 gp_model_-
ad_oops.F90 gp_model_heap_oops.F90 gp_model_oops.F90 gp_model_tl_oops.F90 ifs_-
init.F90 traj_physics_mod_oops.F90 obs_space_mod.F90 obsvec_mod.F90 scan2m_-
oops.F90 scan2mad_oops.F90 scan2mtl_oops.F90 stepo_oops.F90 stepo_oops_traj.F90
suscal_oops.F90 bgobs.F90 cobsall.F90 cobsallad.F90 cobsalltl.F90 departure_-
jo.F90 departure_jotl.F90 hjo.F90 hop.F90 hop_decide_required_sqls.F90 hretr_-
rad.F90 obshor.F90 obshorad.F90 obsop_rad.F90 obsv.F90 obsvad.F90 obsvtl.F90
radtr_ml.F90 slint.F90 slintad.F90 commjbbal.F90 commjbdat.F90 gathercosto.F90
gathereigmd.F90 gathergpf.F90 callpar.F90 callparad.F90 ec_phys.F90 ec_phys_-
drv.F90 ec_phys_drv_ad.F90 ec_phys_drv_tl.F90 fireinj.F90 gems_init.F90 gems_-
init_tl.F90 gems_tend_ad.F90 ghg_main.F90 vdfmain.F90 acradstl.F90 hop_driver.F90
merge_varbc.F90 modgrin.F90 su0phy.F90 su0yoma.F90 su0yomb.F90 su1yom.F90 su_-
surf_flds.F90 suafn1.F90 suct0.F90 sudefo_gflattr.F90 sudyn.F90 sudyna.F90
sugfl1.F90 sugfl2.F90 sugfl3.F90 sugridg.F90 sugridug2.F90 sumcclag.F90 sump0.F90
supp.F90 suptrgppc.F90 susavtend.F90 susc2b.F90 suslb.F90 suspecb.F90 suspecg.F90
suspecg2.F90 suvareps.F90 suvv1.F90 balanced_reduction.F90 cun1.F90 cun2.F90
rdtllcz.F90 vdiflcz.F90 vdiflczad.F90 vdiflcztl.F90 wrtllcz.F90 transdir_-
fields.F90 transdir_wavelet.F90 transdir_waveletad.F90 transinv_wavelet.F90
transinv_waveletad.F90 deallo.F90 dealspa.F90 gpnorm_gfl.F90 gribioflush.F90
gstats_label_ifs.F90 interp_gp.F90 prtjo.F90 reset_accfie_vareps.F90 save_-
test4dinc.F90 sualspa1.F90 suspvariables.F90 write_grid_grib.F90 wrresf.F90
adtest.F90 balvert.F90 balvertad.F90 balverti.F90 balvertiad.F90 bgpert.F90
bgvecs.F90 chavar.F90 chavarad.F90 chavarin.F90 chavarinad.F90 congrad.F90
cvar3.F90 cvar3ad.F90 cvar3in.F90 cvar3inad.F90 djbdy.F90 estsig.F90 estsiga.F90
evcost.F90 grbspa.F90 grtest.F90 inflation_pert.F90 jb_wav_var.F90 jbtomodel.F90
jbtomodelad.F90 jbvcorg.F90 jgnr.F90 jgnrad.F90 jgnri.F90 jgnriad.F90 jgvcor.F90
litest.F90 rdfpinc.F90 readvec.F90 sacmac1.F90 sqrtb.F90 sqrtbad.F90 sqrtbin.F90
sqrtbinad.F90 sualcosjo.F90 sualges.F90 suallr.F90 suallt.F90 suamv.F90 suanebuf.F90
sucos.F90 suecges.F90 suinfce.F90 suinrenormfce.F90 sujb.F90 sujbbal.F90 sujbcor.F90
sujbcosu.F90 sujbdat.F90 sujbstd.F90 sujbwavallo.F90 sujbwavalls_wavgen.F90
sujbwavelet.F90 sujbwavelet0.F90 sujbwavelet_stdevs.F90 sujbwavgen.F90 sujbwavgen_-
hybraw.F90 sujbwavstats.F90 sujbwavvc.F90 sujbwavwri.F90 sulimb.F90 sumdfce.F90
sumoderr.F90 surad.F90 surad_jot.F90 suscat.F90 susepfce.F90 suseprenormfce.F90
sushfce.F90 suvar.F90 taskob.F90 taskob_thread.F90 taskobad.F90 taskobad_-
thread.F90 taskobtl.F90 taskobtl_thread.F90 tlprop.F90 tltest.F90 vec2gp.F90
wrchres.F90 writelct.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): `deallocate_if_allocated_mod.F90`

Files modified (ODB): `get_jo_categories.sql get_jo_categories.sql get_jo_categories.sql`

Files modified (OOPSIFS): `FindIFS.cmake ErrorCovariance3D.cc ErrorCovariance3D.h ErrorCovari`
`FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90 IfsFortran.h IncrementIFS.cc`
`IncrementIFS.h ObsBias.cc ObsBias.h ObsBias.interface.F90 ObsBiasIncrement.cc`
`ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsSpaceODB.cc ObsSpaceODB.h`
`ObsSpaceODB.interface.F90 StateIFS.cc StateIFS.h mpi_wrapper.F90`

Files modified (PREPDATA): `unbal_eda.F90`

Philip Browne - [No branch] - METEOROLOGICAL

Analysis coupling of OCEAN5 SST in the tropics (IFS-291)

Use of Ocean5 SST in the analysis analogously as we do to initialise the long forecast.

This is a prepIFS default change only.

The change:

SURFSST: ostia -> blended_ostia_ocean5

[No branch]

Sebastien Massart - dasm_CY45R1_ACV_from_esuite/diab_CY45R1_dasm_ACV_from_esuite - BIT IDENTICAL

Upgrade of the augmented control variable (IFS-296)

Bit identical changes when LJB_ACV is set to false (default).

Experiments:

- *gx7r* reference with 45R1 branch rdx_CY45R1_esuite_20180312
- *gxps* experiment with new branch (LJB_ACV = false)
- *guzn* eps_nemo experiment**

Change of the analysis suite if LJB_ACV = true.

Need to use the prepIFS overlay /home/rd/dasm/prepifs/overlays/acv_esuite

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90`
`chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_-`
`obsdb.F90 cnt3_glo.F90 cnt3tl.F90 cnt4tl.F90 csekf2.F90 cva2.F90 iopack.F90`
`sim4d.F90 wrmlpp.F90 wrmlppg.F90 hpos.F90 field_definitions.F90 fields_mod.F90`
`grib_utils_mod.F90 iostream_mix.F90 spectral_fields_data.F90 spectral_fields_-`
`mod.F90 surface_fields_mix.F90 traj_main_mod.F90 yom_grib_codes.F90 yom_ygfl.F90`

yomacv.F90 yomafn.F90 yomjg.F90 yommwave.F90 yomppc.F90 yomsekf.F90 yomspjb.F90
mwave_emis.F90 mwave_setup.F90 namacv.nam.h namsekf.nam.h black.F90 defrun.F90
gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90
hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.
cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_-
layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_-
scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_-
jacobians.F90 sm_ekf_main.F90 susekf.F90 su0yoma.F90 su0yomb.F90 su_surf_-
flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudimf2.F90 sudyna.F90 sugfl1.F90
sugfl2.F90 sump0.F90 supp.F90 suspe0.F90 suspecg.F90 add3to5.F90 add5to3.F90
addbgs.F90 addfgs.F90 dealsc2.F90 interp_gp.F90 modeltojb.F90 modeltojbad.F90
sbs5to3.F90 sbsbgs.F90 sbsfgs.F90 state2spec.F90 state2specad.F90 suspvariables.F90
updtim.F90 addhysin.F90 addhysinad.F90 bgevecs.F90 bgvecs.F90 chavar.F90 chavarad.F90
chavarin.F90 chavarinad.F90 cvar2in.F90 cvar2inad.F90 cvar3in.F90 cvar3inad.F90
jbtomodel.F90 jbtomodelad.F90 jbvcor_waveletin.F90 pregprh.F90 preppcm.F90
setacv.F90 suacv.F90 sualges.F90 suallr.F90 suallt.F90 suecges.F90 suinep.F90
suineplap.F90 suinfce.F90 sujb.F90 sujbtest.F90 sujbwavelet.F90 sujbwavelet_-
stdevs.F90 suprfep.F90 susepfce.F90 suvazx.F90 xformev.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save

```
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
```

nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (PREPDATA): wavelet_add_mod_hcor.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Chris Burrows - N/A - METEOROLOGICAL

Extend usage of GEO radiances at high zenith angles (IFS-297)

Currently, geostationary radiances are rejected in the blacklist if the satellite zenith angle is greater than 60 degrees. This change will allow data to be used up to zenith angles of 74 degrees, thus improving coverage at the edges of the geostationary disks. This is particularly significant in the North Atlantic, where a significant amount of Meteosat-10 data is currently not being used.

This change has also prompted (though is not dependent on) the inclusion of slant path for geostationary radiances, and this is covered by another ticket: IFS-298.

When tested on the 45r1 baseline at T399, THREADS_AN needed to be increased from 6 to 9 to avoid running out of memory in upstraj_3.

[No branch]

Chris Burrows - stcb_CY45R1_slant_for_geos2 - METEOROLOGICAL

Apply slant path for GEO radiances (IFS-298)

Another change at 45r2 (IFS-297) is to extend the use of geostationary radiances at high zenith angles (i.e. at the edge of the disk). At these high angles, line of sight of the satellite passes through a number of model columns. In order to improve the representation of these observations, the "slant path" method is used to perform the radiative transfer calculation along the line of sight. The current configuration uses only vertical information from a single location.

This solely requires changes to ifs-source

When tested on the 45r1 baseline, THREADS_AN needed to be increased from 6 to 9 to avoid running out of memory in upstraj_3.

Files modified (CMAKE): `prepdata.cmake satrad.cmake`

Files modified (IFS): `cpedia.F90 spcmascor.F90 chem_tm5.F90 spcm.F90 grib_code_message.F90 sualfpos.F90 sufpfields.F90 sufpphy.F90 vpos_prep.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 grib_utils_mod.F90 iostream_mix.F90 traj_semilag_mod_oops.F90 type_fpfields.F90 yomtraj.F90 aer_drydep.F90 aer_no3nh4.F90 aer_phy3.F90 cloud_satadj.F90 gwdrags.F90 su_aerw.F90 wvxf2gb.F90 uvradi.F90 master.F90 suafn1.F90 suct0.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90 sumpini.F90 sujb.F90`

Files modified (IFSAUX): `drhook.c ec_meminfo.F90`

Files modified (NEMO): `interinfo.F90 restart.F90 interinfo.F90 restart.F90 nemogcmcoup_wam_coupinit.F90 nemogcmcoup_wam_update_stress.F90`

Files modified (ODB): `b2o_convert_asr.F90 b2o_convert_grad.F90 b2o_convert_msg.F90 calc_azim.F90 alloc.h calc_azim.h`

Files modified (SATRAD): `bufr_screen_reo3_superob.F90`

Files modified (SURF): `surfexcdriver_ctl_mod.F90`

Chris Burrows - stpw_CY45R1_atms_geos_corr_err - METEOROLOGICAL

Desroziers errors for GEO radiances (IFS-299)

Implement inter-channel observation error correlations for the geostationary water vapour channels. The current instruments are:

- GOES IMAGER. 1 WV channel.
- SEVIRI (Meteosat Second Generation). 2 WV channels.
- AHI (Himawari). 3 WV channels.
- MVIRI (Meteosat First Generation). 1 WV channel. [now defunct, but operational during 45r2 test periods]

The Desroziers diagnostic R matrix has been computed for each of these instruments, and the resulting errors have been scaled in order to provide the best first guess fit to water vapour channels on other instruments (as well as impact at longer lead times).

The highest diagnosed correlation coefficient is ˜0.9 and this is between Himawari channels 8 and 9 (2 and 3 using the RTTOV numbering). The covariances are provided to IFS in the same format as for IASI, CRIS, etc. i.e. in an ascii file for each instrument, containing the standard deviations and the correlation matrix. Code has been added to revert to the original hard-coded, uncorrelated errors if the file does not exist. If new channels need to be assimilated, the contents of these files will need to be augmented accordingly.

When tested on the 45r1 baseline, THREADS_AN needed to be increased from 6 to 9 to avoid running out of memory in upstraj_3.

The scaling factor is 6.

The code branch specified contains satellite-specific errors, and has been merged with the ATMS change here: https://jira.ecmwf.int/browse/IFS-304

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcosjo.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pertobs.F90 pertobs_interchan_corr.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 departure_jotl.F90 hinth.F90 hjo.F90 hretr_rad.F90 interchan_obserr_cor.F90 rad1cemis.F90 rad1cobe.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90 surad.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV. ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV. LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90`

ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90

tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h
update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90
b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-
gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Chris Burrows - [No branch] - BIT IDENTICAL

Prepare for future GEO instruments (IFS-300)

GOES-13 will be switched off at the end of 2017, and it is uncertain when the GOES-16 radiance data will become available. This code change will prepare IFS for the ingestion of this data. There is currently some uncertainty over the exact BUFR format and method of dissemination. The format needs to be specified within the IFS code.

GOES-17 is due to launch in 2018, and this will replace GOES-15 approximately 6 months after launch, so 45r2 may be a good opportunity to prepare for this data as well.

The migration from Meteosat-10 to Meteosat-11 will occur in early 2018, so this needs to be prepared for.

Furthermore, Himawari-9 data has been tested offline, so committing this code would make sense, especially as if Himawari-8 fails, this data will be used as backup.

COMS data is also available in principle, so code to read this data could also be included in this change.

[No branch]

Peter Weston, Chris Burrows - stpw_CY45R1_atms_geos_corr_err - METEOROLOGICAL

Account for ATMS correlated observation errors (IFS-304)

Account for inter-channel error correlations when assimilating Suomi-NPP ATMS.

The error covariance matrix is diagnosed using the Desroziers method from an experiment using a previously diagnosed matrix from the Hollingsworth-Lonnberg method (the same method was used to produce the IASI error covariance matrix implemented from cycle 43r1). The diagnosed error standard deviations are inflated by an empirically tuned factor of 1.75.

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcosjo.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pertobs.F90 pertobs_interchan_corr.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 departure_jotl.F90 hinth.F90 hjo.F90 hretr_rad.F90 interchan_obserr_cor.F90 rad1cemis.F90 rad1cobe.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90 surad.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV. ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h`

FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
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sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-

sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h
update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90
b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-
gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Katrin Lonitz - stg_CY45R1_allsky_for_46r1 - METEOROLOGICAL

add SSMIS-F17 150 h GHz and GMI 166 vh GHz (IFS-309)

Activate active assimilation of SSMIS-F17 150 h GHz and GMI 166 v/h GHz. Blacklist change

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90
chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 initmdb.F90
update_obsdb.F90 yomdb_defs.h yomdb_defs_undef.h yomdb_vars.h cnt3_glo.F90
csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 gom_plus.F90 grib_-
utils_mod.F90 ifs_dbase_view_mod.F90 ifsobs_schema_mod.F90 iostream_mix.F90
parmwave.F90 sats_mix.F90 surface_fields_mix.F90 varbc_pred.F90 yom_grib_-
codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsats.F90 yomsekf.F90
mwave_assign_emis_amsr2.F90 mwave_assign_emis_gmi.F90 mwave_assign_emis_ssmis.F90
mwave_diags.F90 mwave_emis.F90 mwave_get.F90 mwave_get_ad.F90 mwave_get_tl.F90

mwave_obsop.F90 mwave_obsop_ad.F90 mwave_obsop_tl.F90 mwave_put.F90 mwave_-
screen.F90 mwave_setup.F90 mwave_wrapper.F90 nammwave.nam.h namsekf.nam.h black.F90
defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 bgobs.F90
departure_jo.F90 hinth.F90 hradp_ml.F90 hradp_ml_ad.F90 hradp_ml_tl.F90 hretr_-
rad.F90 obsop_rad.F90 qneg.F90 qnegad.F90 qnegtl.F90 radtr_ml.F90 radtr_ml_-
ad.F90 radtr_ml_tl.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90
cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_-
main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90
radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_-
geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90
suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90
updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90
sujbwavelet_stdevs.F90

Files modified (IFSAUX): rttov_const.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90

bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90

jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_amsr2_-
1d.F90 b2o_convert_asr.F90 b2o_convert_gmi.F90 b2o_convert_ssmis_1d.F90 get_-
varindex.F90 sufger_aeolus.sql aeolus.h allsky.h cma.h links_aeolus_hdr.sql
robhdr_rad.sql sat.h sat_ssmi.sql sufger_aeolus.sql type_definitions.h update_-
hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_-
common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign ecma2ecmascr
Merge_gmi_swaths.F90

Files modified (SATRAD): find_lsm.h get_lsm.h gaussgrid.F90 mod_mie.F90 mwave_const.F90
rttov_types.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_get_rtcoeff.F90
mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_-
lsm.F90 get_lsm.F90 bufr_grid_screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_-
gmi_1d.F90 bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 rttov_scatt_-
make_coef.F90 rttov_ec_setopts.F90 rttov_ad.F90 rttov_calcbt.F90 rttov_calcbt_-
ad.F90 rttov_calcbt_tl.F90 rttov_calcrad.F90 rttov_calcrad_ad.F90 rttov_calcrad_-
k.F90 rttov_calcrad_tl.F90 rttov_direct.F90 rttov_integrate.F90 rttov_integrate_-
ad.F90 rttov_integrate_k.F90 rttov_integrate_tl.F90 rttov_k.F90 rttov_tl.F90
rttov_add_scatt_prof.F90 rttov_boundaryconditions.F90 rttov_boundaryconditions_-
ad.F90 rttov_boundaryconditions_tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90
rttov_eddington_ad.F90 rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_-
hydro.F90 rttov_hydro_ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_-
ad.F90 rttov_iniedd_tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_-
iniscatt_tl.F90 rttov_integratesource.F90 rttov_integratesource_ad.F90 rttov_-
integratesource_tl.F90 rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_-
tl.F90 rttov_nullify_scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_-
scatt_emis_retrieval.F90 rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90
rttov_scatt_tl.F90 rttovscatt_test_one.F90 convert_mietable.F90 density_all.F90
gamma_dsd.F90 get_dia.F90 ice_density.F90 liu_dda.F90 liu_density.F90 melting_-
layer.F90 mg_ellips.F90 mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90
mie_sphere.F90 mod_gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_-
water.F90 permittivity.F90 predict_mom07.F90 predict_psd.F90 predict_psd_-
F07.F90 scattering.F90 set_spectra.F90 vol_fracs.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Filip Vana, Jan Masek, Petra Smolikova - pafv_CY43R3_sl_traj_poles_xyz/pafv_CY45R1_sl_-traj_poles_xyz - NON-METEOROLOGICAL

Improved wind vector interpolation in semi-Lagrangian departure point scheme (IFS-321)

Attempt to fix and improve semi-Lagrangian trajectory research (passive so far) plus two small fixes.

The long standing issue of the present code was omitting the curvature terms when interpolating wind vector components along the spherical coordinates. This was done for a good reason to get rid of complicated security to be free from 0/0 division. This method however apart from being inexact was also suffering from the pole singularities.

The new code brings the curvature terms back to the interpolation. To avoid the complicated security the horizontal wind is transformed to Cartesian coordinates for the interpolation. This elegant trick then completely removes the singularity from the poles: there are no longer undefined components or a need for sign clipping when crossing the pole. The further extension then allow to treat the wind interpolation by second order interpolation eventually extended by 5th order WENO interpolation for the vertical components.

In addition it contains two fixes: First one is related to the field parity for cross-pole interpolation in NH code and SETTLS discretization of RHS (not used at ECMWF). The other fix sets correctly upper boundary for the SL buffers handling the physics from the previous time-step (used at ECMWF but would be only seen when high order interpolation is used for the physics tendencies).

Files modified (IFS): `call_sl_ad.F90 call_sl_tl.F90 cpg5.F90 cpg_dyn.F90 cpg_dyn_-tl.F90 lacdyn.F90 lacdynad.F90 lacdyntl.F90 lapinea.F90 lapinea5.F90 lapineaad.F90 lapineatl.F90 larcin2.F90 larcin2ad.F90 larcin2tl.F90 larcina.F90 larcinaad.F90 larcinatl.F90 larcinha.F90 larmes.F90 larmes5.F90 larmesad.F90 larmestl.F90 lavabo.F90 lavabotl.F90 lavent.F90 laventad.F90 laventtl.F90 laitri.F90 laitri_-weno.F90 laitri_weno_ad.F90 laitri_weno_init.F90 laitri_weno_tl.F90 lascaw.F90 lascaw_cla.F90 lascaw_cla_ad.F90 lascaw_cla_tl.F90 lascaw_clo.F90 lascaw_-clo_ad.F90 lascaw_clo_tl.F90 lascaw_vintw.F90 lascaw_vintw_ad.F90 lascaw_-vintw_tl.F90 lascawad.F90 lascawtl.F90 slextpolad.F90 suvsleta.F90 intdynsl_-mod.F90 ptrslb1.F90 ptrslb15.F90 traj_semilag_mod.F90 yomdyn.F90 yomdyna.F90 yomtraj.F90 yomvsleta.F90 namdyn.nam.h namdyna.nam.h slint.F90 slintad.F90 sualdynb.F90 sudyn.F90 sudyna.F90 suslb.F90`

Patricia de Rosnay, David Fairbairn, Elias Holm, Massimo Bonavita, Philip Browne - dap_-CY45R1_eda2 - METEOROLOGICAL

Use the EDA in the SEKF to compute the Jacobians (IFS-368)

EDA jacobians with screen level variable assimilation

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_-obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_-aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F`

jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90

dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): `altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F`

Patricia de Rosnay, David Fairbairn, Elias Holm, Heather Lawrence, Massimo Bonavita, Philip Browne - dap_CY45R1_smos1 - METEOROLOGICAL

Surface analysis for 46r1: EDA Jacobians and SMOS neural network assimilation (IFS-369)

Branch that includes the EDA jacobians and SMOS Neural network soil moisture data assimilation.

prepIFS overlays: /home/rd/dap/overlays/edah2/45r1

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 gp_model.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 obsgen.F90 pre_thinner.F90 sekf_prep_smos.F90 thin_red_presort.F90 gp_model_oops.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sekf_write.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F90 GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV`

LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90

obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90 obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90 gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Katrin Lonitz - stg_CY45R1_allsky_for_46r1 - METEOROLOGICAL

New Mie-tables generated by using permittivity model (Rosenkranz15) (IFS-406)

Updated Mietables generated using new permittivity model by Rosenkranz15. Rosenkranz15 will be part of RTTOV12.2 which is planned to be implemented into 46R1, too.

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 initmdb.F90 update_obsdb.F90 yomdb_defs.h yomdb_defs_undef.h yomdb_vars.h cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 gom_plus.F90 grib_utils_mod.F90 ifs_dbase_view_mod.F90 ifsobs_schema_mod.F90 iostream_mix.F90 parmwave.F90 sats_mix.F90 surface_fields_mix.F90 varbc_pred.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsats.F90 yomsekf.F90 mwave_assign_emis_amsr2.F90 mwave_assign_emis_gmi.F90 mwave_assign_emis_ssmis.F90 mwave_diags.F90 mwave_emis.F90 mwave_get.F90 mwave_get_ad.F90 mwave_get_tl.F90 mwave_obsop.F90 mwave_obsop_ad.F90 mwave_obsop_tl.F90 mwave_put.F90 mwave_screen.F90 mwave_setup.F90 mwave_wrapper.F90 nammwave.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 bgobs.F90

departure_jo.F90 hinth.F90 hradp_ml.F90 hradp_ml_ad.F90 hradp_ml_tl.F90 hretr_-
rad.F90 obsop_rad.F90 qneg.F90 qnegad.F90 qnegtl.F90 radtr_ml.F90 radtr_ml_-
ad.F90 radtr_ml_tl.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90
cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_-
main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90
radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_-
geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90
suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90
updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90
sujbwavelet_stdevs.F90

Files modified (IFSAUX): rttov_const.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
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a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
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compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
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TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
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GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
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ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
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bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
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bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
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mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
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dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
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flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh

greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_gmi.F90 b2o_convert_ssmis_1d.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h allsky.h cma.h links_aeolus_hdr.sql robhdr_rad.sql sat.h sat_ssmi.sql sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign ecma2ecmascr Merge_gmi_swaths.F90

Files modified (SATRAD): find_lsm.h get_lsm.h gaussgrid.F90 mod_mie.F90 mwave_const.F90 rttov_types.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_gmi_1d.F90 bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 rttov_scatt_make_coef.F90 rttov_ec_setopts.F90 rttov_ad.F90 rttov_calcbt.F90 rttov_calcbt_ad.F90 rttov_calcbt_tl.F90 rttov_calcrad.F90 rttov_calcrad_ad.F90 rttov_calcrad_k.F90 rttov_calcrad_tl.F90 rttov_direct.F90 rttov_integrate.F90 rttov_integrate_ad.F90 rttov_integrate_k.F90 rttov_integrate_tl.F90 rttov_k.F90 rttov_tl.F90 rttov_add_scatt_prof.F90 rttov_boundaryconditions.F90 rttov_boundaryconditions_ad.F90 rttov_boundaryconditions_tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90 rttov_eddington_ad.F90 rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_integratesource.F90 rttov_integratesource_ad.F90 rttov_integratesource_tl.F90 rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_tl.F90 rttov_nullify_scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_scatt_emis_retrieval.F90 rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90 ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90 mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90 predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_spectra.F90 vol_fracs.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Niels Bormann - str_CY45R1_DBNet_update - METEOROLOGICAL

DBNet update (IFS-414)

This contribution updates the use of DBNet data with better timeliness (for AMSU-A and MHS):

- Addition of DBNet data from South American and New Zealand stations
- Thinning to give preference to global rather than DBNet data for AMSU-A
- Correction of azimuth angle provided in the data from some DBNet stations

Archiving of the azimuth angle in the ODBs for sounder data will also be added.

Files modified (IFS): `pre_thinner.F90`

Files modified (ODB): `b2o_convert_atovs.F90 pre_thinn_robhdr_2.sql datastream.F90`

Files modified (SATRAD): `screen_1c.F90`

Peter Lean - dipl_CY45R1_nobshor_201 - METEOROLOGICAL

OOPS: use consistent interpolation in traj and min steps (IFS-432)

There are two options for the horizontal interpolation scheme used to interpolate the model fields to the observation locations; linear and cubic. These are set using the "NOBSHOR" parameter. 201 = linear, 203 = cubic.

Currently, IFS uses cubic interpolation in the trajectory steps and linear interpolation in the minimisation steps. As nobody had a clear reason why different interpolation was used it was decided to revisit this decision in the context of OOPS. The results of a TCo1279 experiment show that using the same interpolation method in all stages gives a slightly improved result (in terms of departure statistics).

OOPS will use only one interpolation method. Originally this change was planned to go in as part of the OOPS implementation, however now that OOPS won't be active in 46r1 it was felt that this change should still go into 46r1 on its own.

Here are the IVER results from a TCo1279 experiment: file:///perm/rd/dipl/iver/plots/NOBSHOR/index.html

Tco399 testing: file:///perm/rd/dipl/iver/plots/NOBSHOR_45R1/index.html

It's not obvious if linear (201) or cubic (203) is better, but either choice appears to improve the current mixed setting. Probably 201 is the best choice in terms of first guess departure stats.

Anna Agusti-Panareda, Marco Matricardi - paf_CY45R1_GHG_rttov_esuite - BIT IDENTICAL

Allow prognostic CO2 to be used in RTTOV observation operator (IFS-439)

In order to be able to use make use of prognostic CO2 fields based on the CAMS GHG scheme in the RTTOV observation operator, a few modifications are needed:

- ability to use GHG in an analysis experiment as free-running tracers not included in the 4DVAR control vector (respecting LASSIM flag like for reactive gases);
- ability to use CO2 without CH4 (bug fix in inteface to fullpos);
- option to actually feed the tracer field through to RTTOV

This modifications will allow testing the interactions between CAMS CO2 and RTTOV in the assimilation of radiances in NWP.

The default values of the flags are LGHG_ASSIM=True and LGHG_RTTOV=False which is the current configuration of the GHG analysis. The LGHG_RTTOV flag should only be switched on in research experiments, as further investigation of its impact is still required.

When LMACC is false the results are bit identical with esuite.

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 vpos_prep.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_-gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 jo_table_-mod.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomaneb.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 reo3sin.F90 sugoms.F90 thin_-red_presort.F90 bgobs.F90 cobs.F90 cobsad.F90 departure_jo.F90 hinth.F90 hretr_-rad.F90 rad1cemis.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 gems_-init_ad.F90 gems_init_tl.F90 gems_tend_ad.F90 gems_tend_tl.F90 ghg_main.F90 local_arrays_ini.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 pos_prepgfl.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 estsig.F90 estsiga.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 rdfpinc.F90 suanebuf.F90 suinfce.F90 suinrenormfce.F90 sujb.F90 sujbwavelet.F90 sujbwavelet_stdevs.F90 vec2gp.F90 writelct.F90 writesd.F90`

Files modified (IFSAUX): `abor1.intfb.h abor1.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV. ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9 GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.`

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ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
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4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
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sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
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vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90

obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90 obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90 gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 rttov_ec.F90 rttov_convert_-profile_units.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Reima Eresmaa - ste_CY45R1_hsir_sounders_on_noaa20_and_metopc - BIT IDENTICAL

Preparation for Metop-C IASI & NOAA-20 CrIS (IFS-440)

Preparation for Metop-C IASI and NOAA-20 CrIS. For Metop-C, provide new IASI and AVHRR RT coefficient files and enable the use of collocated imager data. For CrIS, allow the bufr2odb conversion for Full Spectral Resolution data (i.e. up to 2211 channels).

Blacklist statements for passive monitoring of the two instruments are outlined on lines 1096-1098 and 1154-1155 of file

ec:/ste/blacklists/45r1/black_ds2018032700.45r1.MONITOR_NOAA20_CRIS_METOPC_IASI

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_-

obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90
grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90
yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsats.F90 yomsekf.F90 mwave_-
emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_-
thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 hretr_-
rad.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F9
cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_-
layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_-
scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_-
jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90
suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90
chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_-
stdevs.F90 surad.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-

ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h

obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_cris.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_-
aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql
odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90
datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Jerome Barre, Johannes Flemming, Zak Kipling - cxjb_CY45R1_chemicpath - BIT IDENTICAL

chem_ic dir per EDA member (IFS-475)

it is necessary to have chem_ic dir for each member

in general this should be in stream=ELDA GETIC_PATH=$WDIR/chem_ic

and not GETIC_PATH=$WDIR/../chem_ic

David Fairbairn, Patricia de Rosnay, Philip Browne - dadf_CY45R1_esuite_20170313_SSA_-ONLY - BIT IDENTICAL

Refinements to Surface analysis only configuration of an (LSSAONLY) (IFS-490)

An RD-only surface analysis suite, with no atmosphere tasks, has been implemented in the 45r1 esuite. Refinements to this IFS configuration are needed to make it more flexible. Prior to 46r1 it only ran in long-window 4D-Var mode and had to be initialized from experiments in the "operational" MARS class. For 46r1, it has been modified to allow it to be run in early delivery mode and for it to be initialized from research experiments as well. Small bug fixes have also been applied, including preventing duplicate surface analysis fields in the fdb.

Overlay: /home/rd/dadf/overlays/SSA_ONLY_Feb_2018

Hao Zuo - dihz_CY45R1_nemo_dev - NON-METEOROLOGICAL

Contributions to CY46R1 on ocean analysis system (IFS-495)

1 Extend OCEAN5-BRT suite with reanalysis forcing and delayed observation data sets to the end of 2017

** Extend ERA-interim forcing and WAV forcing ** Extend re-processed observation data sets (in-situ T/S and satellite altimeter SLA) ** update data processing scripts for CMEMS SLA update in April 2017 ** updated prepIFS MENU and default options

2 A series of bug fix for opa type

** bug fix for NEMOQC when dealing with obs located very close to +- 180E. ** bug fixing for opa type and climatology diagnostics ** scripts updates for NCO version upgrade ** bug fix for OCEAN5-NRT archiving ** bug fix for restart files in coupled analysis run **

3 Additional diagnostics for ocean transport sections

4 prepIFS updates (merge /home/rd/dihz/prepMENUS/45R1_for_46R1/45r1/opa/observations.xml and nrt.xml)

** ocean observations tidy-up ** OCEAN5-NRT suite CHUNK updates

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake`

compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
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domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
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mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-

vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
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inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
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rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
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tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
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extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 obs_types.F90 obssla_types.h90
tamtrj.F90 step.F90 ddatetoymdhms.h90 obs_read_seaice.F90 obs_read_sst.F90
obs_types.F90 obssla_types.h90 Ops_OceanSuperob.f90 lapack.F compiler_flags_-
Cray_Fortran.cmake nemo.cfg tools.cfg cdfmoc.f90 CMakeLists.txt ecbufr2fb.F90
ecbufrdata.F90 ddatetoymdhms.h90 greg2jul.h90 jul2greg.h90 obs_fbm.F90 obssla_-
types.h90 plotobs lapack.F Makefile bufrdata.F90 fbDesstat.F90 fbmergebufrtac.F90
fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 fbvthin.F90 obsvthin.F90 osisaf2fb.F90
read_avisocf.h90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Filip Vana - pafv_CY45R1_phys5 - NON-METEOROLOGICAL

Bugfix and optimization of spherical geometry in SL scheme (TLAD code) (IFS-497)

Fix for spherical geometry computation in SL (determining the longitude of the departure point) to make it consistent through NL/TL/AD codes. In addition the stretched and tilted/rotated pole option was separated

from the trivial option in the NL code making it easier to be vectorized (and once again more consistent with the TL/AD counterparts).

This small fix is merged on top of the whole physics and dynamics branch:pae_CY45R1_phys4_318_340_344_-267_441.

Files modified (IFS): call_sl.F90 cpedia.F90 cpg_gp.F90 cpqtuv.F90 gpcty.F90 gpmktend.F90 larche.F90 larche5.F90 larchead.F90 larchetl.F90 lattex.F90 postphy.F90 chem_-init.F90 chem_main.F90 chem_massdia.F90 cormassdry.F90 updclie.F90 updrgas.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 cnt4.F90 csekf2.F90 gmassdiag.F hpos.F90 vpos_prep.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 radiation_ifs_rrtm.F90 radiation_interface.F90 radiation_-setup.F90 surface_fields_mix.F90 type_gflflds.F90 yoeaerc.F90 yoecldp.F90 yoecumf.F90 yoephy.F90 yoerad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomdyn.F90 yomdyncore.F90 yommwave.F90 yomphyder.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 naephy.nam.h naerad.nam.h namcldp.nam.h namcumf.nam.h namdyn.nam.h namdyncore.nam.h namgfl.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 ec_phys_drv_oops.F90 departure_-jo.F90 hinth.F90 radtr_ml.F90 suphy0.F90 callpar.F90 chem_main_layer.F90 climaer_-layer.F90 cloud_layer.F90 cloudsc.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cubasen.F90 cubasen2.F90 cubasen2ad.F90 cubasen2tl.F90 cucalln.F90 cuctracer.F90 cudtdqn.F90 cududv.F90 cuflxn.F90 cuinin.F90 cumastrn.F90 cumastrn2.F90 cumastrn2ad.F cumastrn2tl.F90 cupdra.F90 cupdraad.F90 cupdratl.F90 diag_clouds.F90 ec_phys.F90 ec_phys_drv.F90 ec_phys_tl.F90 ghg_main.F90 local_state_ini.F90 noconvection.F90 postphy_layer.F90 sltend.F90 state_copy.F90 state_increment.F90 state_update.F90 su_aer_climatology3d.F90 su_aerp.F90 sucldp.F90 sucumf.F90 suecaec.F90 suphec.F90 vdfexcu.F90 vdfexcusad.F90 vdfexcustl.F90 vdfhghtn.F90 vdfmain.F90 vdftke.F90 modify_wv_continuum.F90 radact.F90 raddrv.F90 radiation_scheme.F90 radintg.F90 radlswr.F90 srtm_init.F90 suecrad.F90 surdi15.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 pos.F90 pos_prepgfl.F90 sekf_geteda_jacobians.F90 sm_ekf_-main.F90 susekf.F90 su0phy.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sucst.F90 suctrl_gflattr.F90 sudcmip12_spec.F90 sudcmip16_gu.F90 sudcmip16_-spec.F90 sudefo_gflattr.F90 sudyn.F90 sudyncore.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90 sugridug2.F90 sumisc_gu.F90 sumisc_spec.F90 supp.F90 suspecg2.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-

```
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
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bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
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mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
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metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
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jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
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gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
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nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
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ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90
radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-
gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-
ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-
optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-
mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-
optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-
save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-
spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90
radiation_tripleclouds_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (SURF): surfexcdriver_ctl_mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_-

mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_ctl_mod.F90 suscst_mod.F90 vlamsk_-mod.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Patricia de Rosnay, Elias Holm, Gabor Radnoti, Philip Browne - dap_CY45R1_ssa_technical_bi - BIT IDENTICAL

Surface analysis for 46r1: bit-identical changes (IFS-498)

Bit identical changes and small fixes in the surface analysis

- New task in the EDA post-processing to archive variance and covariances fields needed for the EDA Jacobians: fetch_surf_cov_fields (in the jb_stats>fetch_jb_fields family). Associated to update of eda_-err_save
- Define NCYCLE in a single location (config file) and pass it through namssa and namct0 namlists to ssa and ifs, respectively
- Smos TB monitoring data thinning increased to reduce the SMOS monitoring cost (script) - but does not reduce much the cost which is mainly due to the trajectory. Other solution under investigation for possible later change.
- remove LESMOSS variable (fortran) because it was meant for SMOS Salinity monitoring which is not implemented. So, this variable is not used anywhere.
- Clean expver vs EXPVER in the soilana script
- copyodb to work whatever the observing system is for the land surface analysis in the EDA.

Files modified (ENKF): obs_constants.F90

Files modified (IFS): call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_-mix.F90 varbc_rad.F90 yoephy.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomct0.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_-setup.F90 naephy.nam.h namct0.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_-jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_-clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0phy.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 suct0.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (IFSAUX): abor1.intfb.h abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90

coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h
update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90
b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-
gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90

bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Tomas Wilhelmsson, Elias Holm, Massimo Bonavita - dipl_CY45R1_continuous_da_for_46r1 - METEOROLOGICAL

Continuous DA (IFS-514)

Introduce newly arrived observations into each outer loop for Early Delivery 4D-Var.

Files modified (ENKF): obs_constants.F90

Files modified (IFS): call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 stepoad.F90 grib_code_-message.F90 hpos.F90 sufpgrib.F90 gbrad_obsop.F90 gbrad_screen.F90 io_serv_-writefld_ec.F90 control_vectors_comm_mod.F90 field_definitions.F90 field_-gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 varbc_setup.F90 yom_grib_codes.F90 yom_-ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 yomvar.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h namvar.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 obadat.F90 pre_thinner.F90 setup_-tovscv.F90 thin_red_presort.F90 departure_jo.F90 hdepart.F90 hinth.F90 hjo.F90 hradp_ml.F90 hradp_ml_tl.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 chem_-main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_-aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_-scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_-jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90 suvar.F90

Files modified (IFSAUX): abor1.intfb.h abor1.F90

Files modified (IFSOBS): odb2_dbase_mod.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-

Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-

cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h
update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90
b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-
gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_cris.F90 bufr_screen_nexrad.F90 bufr_screen_reo3_superob.F90 rttov_-
read_ascii_sccldcoef.F90 rttov_read_coefs.F90 rttov_locpat_ad.F90 rttov_locpat_-
k.F90 rttov_locpat_tl.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Simon Lang, Elias Holm, Massimo Bonavita - nesl_CY45R2_slimeda_for_46r1 - METEOROLOGICAL

Slim EDA optimisation, 50 member EDA (IFS-517)

This branch includes what is required to run the Slim EDA configuration for testing the merge stages and to run a 50 member EDA.

Pls Note: this ticket is still work in progress, branch name and overlay name may still change

prepIFS overlay: ~nesl/overlay/slim_eda_45r2_for46r1/ (included is a drop down menu item for merge stage testing configuration, rd testing configuration and full EDA)

We will supply a second branch with optimisation to the archiving. This is only relevant to the final 50 member EDA runs

Optimisations, e.g.

- changes to make it possible to precondition perturbed members with control member
- blacklisting of passive observations in perturbed members
- increased thinning of monitored observations in the EDA
- suite optimisations
- ...

The optimisations will also impact the TCo399 4DVar RD test configuration (not bit identical), but meteorological neutral

There might be a fix at the later stage to ens_errors once the testing is complete. This is only relevant for the final full EDA testing

Files modified (IFS): `fpgpnorm.F90 control_vectors_base_mix.F90 control_vectors_-comm_mod.F90 gom_plus.F90 yomvar.F90 namvar.nam.h black.F90 getmini.F90 getmini2.F90 savmini2.F90 sujbwavgen.F90 sujbwavwri.F90 suvar.F90`

Files modified (SATRAD): `rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90`

Tomas Wilhelmsson - da7_CY45R1_aeol_for_46r1 - BIT IDENTICAL

Aeolus in OOPS (IFS-531)

I tried to assimilate some fake Aeolus data with the OOPS branch:dag_CY45R1_esuite_oops

I encountered a problem related to Aeolus. When assimilating Aeolus it fills in special aeolus_l2c ODB tables on the first trajectory and the final trajectory of 4D-Var. It can only do this when it uses the correct sqls associated with the ECMA. In the current oops configuration it effectively runs two final trajectories, one within oopsvar and then a separate one as a normal (non-oops like) ifstraj at the end. The one in oopsvar only has access to the CCMA, and hence cannot fill in aeolus_l2c ODB data. Hence it crashes in oopsvar when trying to fill in aeolus_l2c data.

Hence to avoid a crash in oopsvar I ensure in ifs/op_obs/obsop_conv.F90 that the aeolus_l2c data for the final trajectory is only filled in if not in OOPS mode i.e. if .NOT. L_OOPS, therefore it only gets filled in within the final ifstraj, outside of oops.

My change to ifs/op_obs/obsop_conv.F90 in da7_CY45R1_aeolus_for_46r1 is on top of the dag_CY45R1_esuite_oops code base.

Files modified (ALGOR): `m1qn3.F m1qn3a.F`

Files modified (DUMMY): `efpfilter.F fpboyd.F`

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 call_sl_ad.F90 call_sl_tl.F90 cpedia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpglag.F90 fv_gradient.F90 gp_derivatives.F90 lacdyn.F90 larcin2.F90 larcin2ad.F90 larcina.F90 larcinha.F90 latte_kappa.F90 lattex.F90 lavabo.F90 postphy.F90 spchor.F90 efpfilter.intfb.h eincli1.intfb.h eincli10.intfb.h eincli2.intfb.h eincli3.intfb.h eincli4.intfb.h eincli5.intfb.h eincli6.intfb.h eincli7.intfb.h eincli8.intfb.h eincli9.intfb.h elascaw.intfb.h eslextpol.intfb.h espfp.intfb.h etransinv_mdl.intfb.h fp2sx1.h fp2sx2.h fpboyd.intfb.h fpezo2h.intfb.h gridfpossfx_init.h suefpg3.intfb.h sufpcsfx.h sufpezo.intfb.h wrsfx.h incli0.F90 can1.F90 canari.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 updclie_co2.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 adjotest.F90 allfpos.F90 cdsta.F90 cfcsens2obs.F90 cnt0.F90 cnt1.F90 cnt2.F90 cnt3.F90 cnt3_glo.F90 cnt3_wait.F90 cnt3ad.F90 cnt3tl.F90 cnt4.F90 cnt4ad.F90 cnt4tl.F90 cprep1.F90 cprep3.F90 csekf1.F90 csekf2.F90 cva1.F90 cva2.F90 forecast_error.F90 fpwrncf.F90 get_clinc.F90 gp_model.F90 gp_model_ad.F90 gp_model_heap.F90 gp_model_stack.F90 gp_model_tl.F90 iopack.F90 reresf.F90 restart_cnt3.F90 scan2m.F90 scan2mad.F90 scan2mtl.F90 sim4d.F90 stepo.F90 stepoad.F90 testli.F90 testlievol.F90 dfi.F90 dfi2.F90 dfi2mod.F90 dfi3.F90 check_phtrajt.F90 cpcfu.F90 cpxfu.F90 extfpnorm.F90 fpgpnorm.F90 grib_code_message.F90 inifaoutinfo.F90 ppclose.F90 ppflush.F90 ppopen.F90 ppstat.F90 preset_grib_template.F90 sp2gpmcuf.F90 suecfname.F90 suofname.F90 wrfld_fp.F90 wrfu.F90 wrgathflnm.F90 wrgrida.F90 wrgridall.F90 wrgridall_fp.F90 wrgridall_map.F90 wrgridua.F90 wrmlppa.F90 wrmlppg.F90 wrmlpplg.F90 wroutgpgb.F90 wroutspgb.F90 wrphtrajt.F90 wrsp2fa.F90 wrspeca.F90 wrspeca_fp.F90 wrspeca_gp.F90 wrspeca_map.F90 wrxfu.F90 fp_serv_cpfpfilter.F90 fp_serv_suiosctmpl.F90 fp_serv_sync.F90 cpclimi.F90 cpfpfilter.F90 cpvpospr.F90 dynfpos.F90 endpos.F90 endpos_prepgfl.F90 endvpos.F90 fpachmt.F90 fpcica.F90 fpcincape.F90 fpcorphy.F90 fpfilter.F90 fpgeo.F90 fphalo.F90 fpintdyn.F90 fpintphy.F90 fpmodcfu.F90 fpmodprec.F90 fpmodxfu.F90 fposhor.F90 fposhorlag.F90 fpsampl.F90 fpselezo.F90 fpspecfitg.F90 fpspnorms.F90 fullpos_drv.F90 fullpos_precond.F90 getfplun.F90 gridfpos.F90 hpos.F90 hpos_cfu.F90 hpos_dyn.F90 hpos_xfu.F90 ini1wrfp.F90`

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prespfpos.F90 rdclimo.F90 rdecclimo.F90 rdfpfilter.F90 scan2m_hpos.F90 scan2m_-
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sufpcnt.F90 sufpconf.F90 sufpd.F90 sufpdistrib.F90 sufpdyn.F90 sufpf.F90 sufpfields.F
sufpfilters.F90 sufpfit.F90 sufpg.F90 sufpg2.F90 sufpgeometry.F90 sufpgrib.F90
sufpioh.F90 sufpios.F90 sufpmapf.F90 sufpmodelgeo.F90 sufpofname.F90 sufpoph.F90
sufporog.F90 sufpphy.F90 sufprfpbuf_clim.F90 sufprfpbuf_geom.F90 sufprfpds.F90
sufpsc2.F90 sufpsc2_dep.F90 sufpsuw.F90 sufptr2.F90 sufptrans.F90 sufpusergeo.F90
sufpvert.F90 sufpwfpbuf.F90 sufpwfpds.F90 sufpwide.F90 sufpxfu.F90 sumpfpos.F90
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updvpos.F90 vpos.F90 vpos_prep.F90 wrfpfilter.F90 wrgp2fafp.F90 wrhfp.F90 wrmlfp.F90
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cla_tl.F90 lascaw_clo.F90 lascaw_clo_ad.F90 lascaw_clo_tl.F90 lascaw_vintw.F90
lascaw_vintw_ad.F90 lascaw_vintw_tl.F90 slcomm.F90 slcset.F90 slextpol.F90
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comm_mod.F90 control_vectors_data_mix.F90 control_vectors_oper_mod.F90 control_-
vectors_para_mod.F90 debug_nproma_mod.F90 ec_phys_fields_mod.F90 eint_mod.F90
error_correlations_info_mod.F90 extfpselect_mod.F90 factx_mod.F90 field_container_-
base_mod.F90 field_container_gp_mod.F90 field_container_oper_mod.F90 field_-
definitions.F90 field_gfl_wrapper.F90 fields_base_mod.F90 fields_mod.F90 fullpos.F90
fullpos_mix.F90 fullpos_oops_mod.F90 geometry_mod.F90 geometry_setup_mod.F90
gfl_subs_mod.F90 gmv_subs_mod.F90 gom_mod.F90 gom_plus.F90 grib_handles_mod.F90
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yomfptrans.F90 yomfpusergeo.F90 yomgbrad.F90 yomgfub.F90 yomgrib.F90 yomio.F90
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emis.F90 mwave_obsop_test.F90 mwave_setup.F90 naephy.nam.h namafn.nam.h namarg.nam.h
namcosjo.nam.h namct0.nam.h namdyn.nam.h namfa.nam.h namfpc.nam.h namfpd.nam.h
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thinn.F90 obadat.F90 pre_thinner.F90 rd_obs_boxes.F90 readoba.F90 setup_tovscv.F90
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ml_tl.F90 hretr_rad.F90 hsatang.F90 obshor.F90 obshorad.F90 obsop_conv.F90
obsop_precip_accum.F90 obsop_rad.F90 obsop_varbc.F90 obsv.F90 obsvad.F90 obsvtl.F90
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callparad.F90 callpartl.F90 chem_main_layer.F90 climaer_layer.F90 cos_sza.F90
cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_-
phys.F90 ec_phys_ad.F90 ec_phys_drv.F90 ec_phys_drv_ad.F90 ec_phys_drv_tl.F90
ec_phys_tl.F90 fireinj.F90 gems_init.F90 gems_init_tl.F90 gems_tend_ad.F90
ghg_main.F90 postphy_layer.F90 su_aerp.F90 suphli.F90 vdfexcusad.F90 vdfexcustl.F90
vdfmain.F90 vdfouter.F90 wvxf2gb.F90 radiation_scheme.F90 radintg.F90 radlswad.F90
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suafn2.F90 suafn3.F90 sualdyn.F90 suarg.F90 suarg_datestuff.F90 sucfu.F90 suct0.F90
suctrl_gflattr.F90 sudefo_gflattr.F90 sudefo_tstep.F90 sudyn.F90 sudyna.F90
sufa.F90 sufpilmod.F90 sufpinif.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90 sugrclia.F90
sugrib.F90 sugridg.F90 sugridua_map_part1.F90 sugridug2.F90 sumcclag.F90 sump0.F90
sumts.F90 suoph.F90 suoph0.F90 suorog.F90 supp.F90 suptrgppc.F90 surgri.F90
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write_grid_grib.F90 write_wavelet_initcv_grib.F90 wrresf.F90 adtest.F90 balvert.F90
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congrad.F90 cvar2.F90 cvar2ad.F90 cvar2in.F90 cvar2inad.F90 cvar3.F90 cvar3ad.F90
cvar3in.F90 cvar3inad.F90 cvargpad.F90 cvargptl.F90 estsig.F90 estsiga.F90
get_traj_phys.F90 getsatid.F90 grbspa.F90 grtest.F90 inflation_pert.F90 jb_-
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sqrtbin.F90 sqrtbinad.F90 sualctv.F90 sualges.F90 suallr.F90 suallt.F90 suanebuf.F90
suecges.F90 suinep.F90 suinfce.F90 suinrenormfce.F90 sujb.F90 sujbbal.F90 sujbcor.F90
sujbcosu.F90 sujbdat.F90 sujbstd.F90 sujbtest.F90 sujbwavelet.F90 sujbwavelet0.F90
sujbwavelet_stdevs.F90 sujbwavgen.F90 sujbwavgen_hybraw.F90 sujbwavstats.F90
sujbwavvc.F90 sujbwavwri.F90 sumdfce.F90 sumoderr.F90 surad.F90 suscal.F90
suscal_jb.F90 susepfce.F90 suseprenormfce.F90 sushfce.F90 suvar.F90 suvazx.F90
taskob.F90 taskob_thread.F90 taskobad.F90 taskobad_thread.F90 taskobtl.F90
taskobtl_thread.F90 tlprop.F90 tltest.F90 vec2gp.F90 wavxform.F90 wrchres.F90
writelct.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): abor1.intfb.h deallocate_if_allocated_mod.F90 mpl_comm_-
split_mod.F90 abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F

a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90

lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90 inisoftdef.F90 plotsoft.F90 updsoft.F90 writegridsta
writescat.F90 writesoft.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_-
rain_rates.F90 get_varindex.F90 scat_ambig_select.sql scat_ambig_select.sql
sufger_aeolus.sql aeolus.h black_robody_4.sql cma.h links_aeolus_hdr.sql sat.h
scat_ambig_select.sql scatt.h sufger_aeolus.sql type_definitions.h update_-
hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_-
common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-
gmi_swaths.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h
AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria
AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90

FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h
GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc
IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.
IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF
LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h
LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 ModelBiasCovariance.h
ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h ModelIFS.interface.F90 ModelIFS.list.F90
ODB.list.F90 ObsBias.cc ObsBias.h ObsBias.interface.F90 ObsBiasCovariance.cc
ObsBiasCovariance.h ObsBiasCovariance.interface.F90 ObsBiasCovarianceTOVSCV.cc
ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interface.F90 ObsBiasCovarianceVARB
ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F90 ObsBiasCtlVecTOVSCV.cc
ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90 ObsBiasCtlVecVARBC.cc
ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90 ObsBiasIncrement.cc ObsBiasIncr
ObsBiasIncrement.interface.F90 ObsBiasIncrementTOVSCV.cc ObsBiasIncrementTOVSCV.h
ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.cc ObsBiasIncrementVARBC.h
ObsBiasIncrementVARBC.interface.F90 ObsBiasLListsTOVSCV.F90 ObsBiasLListsVARBC.F90
ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90 ObsBiasVARBC.cc
ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsSpaceODB.cc ObsSpaceODB.h ObsSpaceODB.in
ObsVector.cc ObsVector.h ObsVector.interface.F90 StateIFS.cc StateIFS.h Trajectory.li
VariablesIFS.interface.F90 ifs_init_wrapper.F90 instantiateObsAuxFactories.h
instantiateObsErrorFactory.h instantiateObsOpFactories.h instantiateTlmFactory.h
mpi_wrapper.F90 pm_link_mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): unbal_eda.F90

Files modified (SATRAD): getcparam.h mod_cparam.F90 mwave_const.F90 mwave_get_rtcoeff.F90
mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 gensatim.F90
rttov_read_ascii_sccldcoef.F90 rttov_read_coefs.F90 co2cld.F90 getcparam.F90
phrtsetup.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_-
ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90
rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (SSA): setcomssa.F90

Files modified (SURF): suct01s.F90 yomct01s.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F yowcoup.F

Elias Holm, Tomas Wilhelmsson - dae_CY45R1_SUJBWAVGEN_READPARALLEL - NON-METEOROLOGICAL

EDA JBCALC calculation of B covariances: Reading in parallel in sujbwavgen (IFS-536)

The calculation of B covariances in EDA/JBCALC reads in about 200 ensemble states in serial through iostream and this is a bottleneck for the speed of this job, taking up to 80% of time.

This branch implements parallel reading and distribution of states to speed this up significantly.

In addition, covariances which are calculated summing contributions from several timesteps are now computed more correctly by normalizing contributions from each timestep by its own variance rather than by the variance

over all timesteps. This has a small, non-meteorological impact.

NOTE: This branch is only needed when the esuite EDA starts.

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0yomb.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 susc2b.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbchvar.F90 sujbwavelet0.E sujbwavelet_stdevs.F90 sujbwavwri.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV. ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9 GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV. LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90 ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90 RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface`

nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90

extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Melanie Ades, Zak Kipling - cxad_CY45R1_Sentinel3_aod - BIT IDENTICAL

Changes to allow the S3 AOD data to be used (IFS-556)

Changes to allow for the inclusion of S3 SLSTR data once it is available.

Also need to change the odb_code_mappings.dat file to include the line:

5082 , 6 , 3 , 207 , 7 , 206 , 180 , 180 , 61 , -1 ,

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 varbc_to3.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90

coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90 domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90 metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90 ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90 iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90 lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90 mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90 jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90 obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90 obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90 obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90 obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90 gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 b2o_convert_modisaer.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F

wgribenout.F wgribout.F

Heather Lawrence, Achim Strunk - N/A - METEOROLOGICAL

Change the MWHS-2 coefficient file to the version with correct polarisations (IFS-566)

The RTTOV-12 coefficient file created for FY-3C MWHS-2 had the wrong polarisations for the window channels (channels 1 and 10). Similarly the polarisations were wrong for the mwts2 instrument although we do not have data for this instrument at the moment. The change is to correct this by replacing the coefficient files for mwhs-2 and mwts-2 with the right ones.

The files to be replaced are:

ccb:/home/rd/rdx/data/46r1/sat/rttov/rtcoef_fy3_*_mwhs2.dat

ccb:/home/rd/rdx/data/46r1/sat/rttov/rtcoef_fy3_*_mwts2.dat

[No branch]

Bruce Ingleby, Lars Isaksen, Tomas Kral - dabi_CY45R1_bufr2odb_bdropdup - METEOROLOGICAL

Detection of errors in radiosonde drift positions (IFS-568)

For some time we have been aware that the reported radiosonde drift positions can be wrong - although this is quite rare - and I have been working on a fix for this in the IFS (a modification to btemdup.F90 and a new routine checkrsdrift.F90, in branch dabi_CY45R1_bufr2odb_bdropdup, based on a contribution by Tomas Kral). The fix is now working and has being tested on Jan and July 2018 data (expts h068 and h06n). Using the standard 15 minute interval for drift processing there are two errors (15 minute sections) in 1-14 Jan and one in 1-14 July. I have also run 3 days in September 2017 with a 1 minute interval - detecting 9 errors in 6 profiles - the shorter the interval the more likely we are to 'hit' errors in individual levels.

Although these errors are quite rare we would like to get this change into 46r1 - partly in case the frequency increases as more countries send BUFR reports with drift positions.

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 varbc_setup.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcoctp.F90 yommwave.F90 yomppc.F90 yomscc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namscc.nam.h namsekf.nam.h black.F90 btemdup.F90 checkrsdrift.F90 defrun.F90 fgwnd.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 redml.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 hjo.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F9 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 cmoctmap.F90 cmoctmap_inv.F90 su_-

surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90
dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90
jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-

opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
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Michail Diamantakis - pafv_CY45R2_RK4_and_SLHD - BIT IDENTICAL

New SL scheme options, optimizations and various fixes (IFS-588)

New state of art code of the SL scheme introduced making the previous contributions more encapsulated (closer to the original state in CY45). It fixes some merge issues from OOPS and tends to do better OpenMP synchronization in AD SL code (not fully yet). The code now contains complete development including TL/AD code for:

i/ new interpolation for wind during SL trajectory research,

ii/ option LSLHD_CURV processing interpolation and rotational matrix computation in Cartesian space rather then on sphere,

iii/ Runge-Kutta 4th order scheme as an alternative to the present 2nd order iterative scheme and

iv/ the non-linear diffusion to pacify grid-point storms near the atmospheric top.

All so far passive.

Files modified (AEOLUS): arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_-
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dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90
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sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_-
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set_halos_fld.F90 CMakeLists.txt dwarf_module.F90

Files modified (BL): dynamic_symbols.c mf_blacklist.b

Files modified (CMAKE): algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake
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wam.cmake

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horiz_flt.F suefpbip.F sueinfce.F

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Files modified (FIELDMAN): FieldSet.hpp

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suvert.F90 suvert2.F90 suvertdlr.F90 suvertfe.F90 suvertfe1.F90 suvertfe3.F90
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suxfu.F90 traj_setup.F90 balanced_reduction.F90 cun2.F90 eof_matrix.F90 nalan1.F90
opk.F90 rdtllcz.F90 sulcz.F90 wrtllcz.F90 wrtsv.F90 transdir_fields.F90 transdir_-
fp.F90 transdir_nhconvprhs.F90 transdir_wavelet.F90 transdir_waveletad.F90
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transinv_wavelet.F90 transinv_waveletad.F90 transinvad_fields.F90 transinvh.F90
add3to5.F90 add5to3.F90 addbgs.F90 addfgs.F90 dealfpos.F90 dealsc2.F90 dealsekf.F90
dealspa.F90 dverint.F90 filedate.F90 final_stats.F90 gpnorm_gfl.F90 grib_-
mean.f90 gribioflush.F90 gstats_label_ifs.F90 interp_gp.F90 link.f90 matrixin.F90
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sualspa1.F90 suspvariables.F90 updtim.F90 verdisint.F90 verint.F90 wrgp2fa.F90
write_ctlvec_grib.F90 write_grid_grib.F90 write_wavelet_initcv_grib.F90 wrresf.F90
add_moderr_tl.F90 addhysin.F90 addhysinad.F90 adtest.F90 aerlid_setup.F90 balvert.F90
balvertad.F90 balverti.F90 balvertiad.F90 bgevecs.F90 bgpert.F90 bgvecs.F90
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cvargpad.F90 cvargptl.F90 djbdy.F90 estsig.F90 estsiga.F90 evcost.F90 fltbgerr.F90
get_traj_phys.F90 getmini.F90 getmini2.F90 getsatid.F90 grbspa.F90 grbspa_-
mf.F90 grtest.F90 inflation_pert.F90 jb_wav_var.F90 jbtoacv.F90 jbtomodel.F90
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jgnr.F90 jgnrad.F90 jgnri.F90 jgnriad.F90 jgvcor.F90 lchtcalc.F90 litest.F90
monitoring_summary.F90 preppcm.F90 rd801.F90 rdfpinc.F90 read_surfgrid_traj.F90
readvec.F90 savmini.F90 savmini2.F90 setjbhybacv.F90 setqccma.F90 setran.F90
sqrtb.F90 sqrtbad.F90 sqrtbin.F90 sqrtbinad.F90 suacv.F90 sualctv.F90 sualges.F90
suallr.F90 suallt.F90 suanebuf.F90 suecges.F90 suensmem.F90 suinep.F90 suineplap.F90
suinfce.F90 suinrenormfce.F90 suiomi.F90 sujb.F90 sujbbal.F90 sujbcor.F90 sujbcosu.F90
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sujbwavrenorm.F90 sujbwavstats.F90 sujbwavvc.F90 sujbwavwri.F90 sumdfce.F90
sumoderr.F90 suprecov.F90 suprfep.F90 suqnorm.F90 surad.F90 surinc.F90 suscal.F90
suscal_jb.F90 suscal_norms.F90 suscat.F90 susepfce.F90 suseprenormfce.F90 sushfce.F90
suvar.F90 suvazx.F90 suvifce.F90 taskob.F90 taskob_thread.F90 taskobad.F90
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upspec.F90 varcalc.F90 varflt_crt.F90 varflt_trunc.F90 vec2gp.F90 wavxform.F90
wrchres.F90 writelct.F90 writeoba.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): comcha.h comdat.h comddh.h ctlarch.F ctldompf.F ctldomts.F
ctlzon.F decops2.F description_table.dat getarea.F getcom1.F getcom2.F getdom.F
getrec.F getreci.F getzon.F incdat.F invjul.F julday.F namus.h offset.F opone.F
param.h rearec.F suarch.F sucom.F sucom2.F swapts.F i_system.c facgrm.F90 fadgra.F90
fagote.F90 faieno.h falgra.h faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.
isrchfltpv.body.h lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_-
mod.F90 fdbsubs_mod.F90 mpl_allgatherv_mod.F90 mpl_comm_split_mod.F90 mpl_-
end_mod.F90 mpl_gatherv_mod.F90 oml_mod.F90 rttov_const.F90 rttov_ec_mod.F90
yomlun_ifsaux.F90 ddhrun.F faconvgrib.F90 splitps.F abor1.F90 dr_hook_util.F90
drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt History.txt VERSION.cmake config.sh README.md
cat_dbase.md dbase_view_mod.md generate_docs.sh match_dbase.md CMakeLists.txt

CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 netcdf_file_mod.F90 quicksort_-
mod.F90 dbase_factory_mod.F90 hdf_dbase_mod.F90 odb1_dbase_mod.F90 odb2_dbase_-
mod.F90 odbserver_dbase_mod.F90 dbase_kinds_mod.F90 dbase_view_mod.F90 CMakeLists.txt
map_dbase_mod.F90 mapping_aux_funcs.F90 mapping_parser_mod.F90 mappings_mod.F90
match_dbase_mod.F90 partition_dbase_mod.F90 CMakeLists.txt cat_dbase.F90 match_-
dbase.F90 CMakeLists.txt nc_sample_map_dbase.cdl test_map_dbase_bufr_mapping.dat
test_map_dbase_mapping.dat test_convert_dbase_odb1.sh test_cope_repartitioning.F90
test_dbase_performance.F90 test_dbase_view.F90 test_join_views.F90 test_ll.F90
test_match_dbase.sh test_overhead_odb2.F90 test_parallel_distribute.F90 test_-
quicksort.F90

Files modified (NEMO): CMakeLists.txt diahth.F90 divcur.F90 dynhpg.F90 dynldf_-
bilap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 lib_-
mpp.F90 ldfslp.F90 obs_grd_bruteforce.h90 solpcg.F90 eosbn2.F90 traadv.F90
traadv_tvd.F90 tradmp.F90 traldf_iso.F90 zdfddm.F90 zdfmxl.F90 zdftke.F90 zdftmx.F90
lib_fortran.F90 arch-IBM_EKMAN_INGV.fcm namelist_cfg CFCs_CMIP6.dat cfc1112.atm
iodef.xml namelist_age_cfg namelist_age_ref namelist_cfg cpp_ORCA2_LIM_CFC_-
C14b.fcm field_def.xml namelist_cfc_ref namelist_ref makenemo agrif_opa_interp.F90
agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90 diaar5.F90 diacfl.F90 diadct.F90
diahth.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90 divcur.F90 dynhpg.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90
dynzdf_imp.F90 icbtrj.F90 iom.F90 cla.F90 lbclnk.F90 lib_mpp.F90 ldfslp.F90
obs_grd_bruteforce.h90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90 sbcblk_-
algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_clio.F90
sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90 sbcsglcpl.F
solpcg.F90 eosbn2.F90 traadv.F90 traadv_eiv.F90 traadv_mle.F90 traadv_tvd.F90
trabbl.F90 tradmp.F90 traldf.F90 traldf_iso.F90 tranxt.F90 trazdf.F90 trd_-
oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90 zdftmx.F90
lib_fortran.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90
par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_-
cfc.F90 trcini_cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_trc.F90 trcnam_-
my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90
p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90
trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort
athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90
compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90
create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam CMakeLists.txt obs_-
fbm.F90 obs_utils.F90 profdata.F90 NemoQc_configuration.cmake arch_configuration.cmak
arch_keys_Intel.cmake compiler_flags.cmake compiler_flags_Intel_CXX.cmake compiler_-
flags_Intel_Fortran.cmake compiler_flags_PGI_Fortran.cmake tools_configuration.cmake
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update.F90 nemogcmcoup_mlflds_get.F90 nemogcmcoup_mlinit.F90 nemohth.F90 griblsm.F90
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nemogcmcoup_exflds_get.F90 nemogcmcoup_final.F90 nemogcmcoup_get.F90 nemogcmcoup_-

get_1way.F90 nemogcmcoup_get_mpmd.F90 nemogcmcoup_init.F90 nemogcmcoup_init_-
ioserver.F90 nemogcmcoup_init_ioserver_2.F90 nemogcmcoup_lim2_get.F90 nemogcmcoup_-
lim2_update.F90 nemogcmcoup_step.F90 nemogcmcoup_update.F90 nemogcmcoup_update_-
add.F90 nemogcmcoup_update_mpmd.F90 nemogcmcoup_wam_coupinit.F90 nemogcmcoup_-
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kind.F90 nemopseudo.F90 nemopseudompmd.F90 nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
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to_simocn_gauss_1pts_cca.ksh dists_atm_to_simocn_gauss_4pts_cca.ksh dists_-
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Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
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outer_data swan_inner.ksh swan_outer.ksh cray_outer.ksh getecfstestdata.ksh
field_def.xml field_def_xios2.xml iodef_default.xml iodef_default_xios2.xml
iodef_single_xios2.xml namelist_cfg.ORCA025_Z75 namelist_cfg.ORCA1_Z42 namelist_-
ice_cfg.ORCA025 namelist_ice_cfg.ORCA1 namelist_ref ompi_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_io setup_namelist_xios setup_outer_data cdfmoc.f90 CMakeLists.txt config.macpor
Makefile config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90
config.cray ecatmosbufrdata.F90 ecsstbufrdata.F90 Makefile config gribdcoast.F90
griblsm.F90 griblsmwam.F90 gribtools.F90 config.macports Makefile config griblsm.F90
gribthin.F90 gribtools.F90 index_sort.F90 nctools.F90 obs_fbm.F90 obs_utils.F90
toolspar_kind.F90 icecdamp.F90 config.cray config.crayomp config.macports config.macp
config.opensuse131 config.opensuse131mpiomp config.opensuse131omp getsst.F90
griblsm.F90 orca_grid.F90 remapfluxes.F90 remapsst.F90 remapsstgauss.F90 scripsst.F90
grid2kml kmlgrid.F90 kmlgridmod.F90 Makefile areadata.F90 config ctl_stop.h90
date_utils.F90 amona_go66go65_sfc.ksh amona_go66go65_sfc_masked.ksh amona_-
go66go65_ua.ksh amona_go66go65_waves.ksh omona_go66_1h.ksh omona_go66_3h.ksh
plot_10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh
plot_sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
oras5_sst_2017.ksh omona_ostia_sst_2017.ksh plot_sst_2017.ksh retrieve_oras4_-
sst_2017.ksh retrieve_oras5_sst_2017.ksh retrieve_ostia_sst_2017.ksh standard_-
areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
netcdfinput.F90 omonadata.F90 omonatypes.F90 orca_grid.F90 spherepolygons.F90

toolspar_kind.F90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
plotnemo plotobs plotobs.F90 plotpoints plotpoints.F90 plotpointsnc plotreg.F90
plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 config.macports config.macportsomp fbaddrename.
fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
coords.F90 config.macports

Files modified (OBSTAT): obstat_def.F90 iniitemloc.F90 inisoftdef.F90 obstat_scat_-
plot.F90 plotsoft.F90 updsoft.F90 writegridstats.F90 writescat.F90 writesoft.F90

Files modified (ODB): CMakeLists.txt cma_open.c b2o_amend.F90 b2o_convert.F90 b2o_-
convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_-
atovs.F90 b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_gmi.F90 b2o_-
convert_grad.F90 b2o_convert_iasi.F90 b2o_convert_modisaer.F90 b2o_convert_-
msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_oscat.F90 b2o_convert_pilot.F90
b2o_convert_rain_rates.F90 b2o_convert_reo3.F90 b2o_convert_ssmis_1d.F90 b2o_-
convert_synop_land.F90 b2o_convert_tamdar.F90 b2o_convert_temp.F90 b2o_convert_-
temp_hires.F90 b2o_convert_windprofiler.F90 b2o_crc.c calc_azim.F90 get_varindex.F90
odb_target_ignore_missing_symbols.cmake genc.c sat_atovs_hyper.sql scat_ambig_-
select.sql sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_-
4.sql decis_robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h
sat_atovs.sql sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h
b2o_debug.h cmaio.h odb_assoc_cols.h odb_it_members.h calc_azim.h codb.c datastream.F
twindow.c b2o_functional.F90 b2o_get.F90 b2o_utility.F90 varindex_module.F90
bator_datetime_mod.F90 bator_decodbufr_mod.F90 bator_decodgrib_mod.F90 bator_-
decodhdf5_mod.F90 bator_decodnetcdf_mod.F90 bator_ecritures_mod.F90 bator_-
impr_mod.F90 bator_init_mod.F90 bator_lectures_mod.F90 bator_module.F90 bator_-
rad_postproc_mod.F90 bator_saisies_mod.F90 bator_util_mod.F90 bator_namelist.nam.h
ecma2ecmascr Bator.F90 Convert_dbase.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h
AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria
AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90
FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h
GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc
IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.
IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF
LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h
LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 Logbook.interface.F90
LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h

ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h
ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte
ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90
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ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.c
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ObsBiasLListsVARBC.F90 ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90
ObsBiasVARBC.cc ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsSpaceODB.cc ObsSpaceODB.
ObsSpaceODB.interface.F90 ObsVector.cc ObsVector.h ObsVector.interface.F90
StateIFS.cc StateIFS.h Trajectory.list.F90 VariablesIFS.interface.F90 ifs_-
init_wrapper.F90 instantiateObsAuxFactories.h instantiateObsErrorFactory.h
instantiateObsOpFactories.h instantiateTlmFactory.h mpi_wrapper.F90 pm_link_-
mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): matutils.F90 chgrib.c fillgaussgrib.F90 unbal_eda.F90
wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90
radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-
gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-
ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-
optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-
mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-
optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-
save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-
spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90
radiation_tripleclouds_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): throw.h find_lsm.h get_lsm.h getcparam.h cparam.F90 gaussgrid.F90
mod_camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_mie.F90 mod_-
mwatlas_m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_atlas.F90 mod_-
rttov_fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_test.F90 mod_-
screen_1c_bufrmsg.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90
rttov_chain.F90 rttov_coef_io_mod.F90 rttov_ec_settings.F90 rttov_fast_coef_-
utils_mod.F90 rttov_getoptions.F90 rttov_global.F90 rttov_hdf_chanprof_io.F90
rttov_hdf_coefs.F90 rttov_hdf_emissivity_io.F90 rttov_hdf_options_config_-
io.F90 rttov_hdf_options_rt_all_io.F90 rttov_hdf_options_rt_ir_io.F90 rttov_-
hdf_options_rt_mw_io.F90 rttov_hdf_profile_io.F90 rttov_hdf_profiles.F90 rttov_-
hdf_radiance_io.F90 rttov_hdf_reflectance_io.F90 rttov_hdf_rttov_coef_io.F90
rttov_hdf_rttov_coef_pcc_io.F90 rttov_htfrtc_interface_mod.F90 rttov_interface_-
mod.F90 rttov_lapack_mod.F90 rttov_math_mod.F90 rttov_scattering_mod.F90 rttov_-
solar_refl_mod.F90 rttov_tessem_mod.F90 rttov_test_k_mod.F90 rttov_test_mod.F90
rttov_types.F90 rttov_unix_env.F90 rttov_zutility.F90 mwave_ec_setopts.F90
mwave_emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_-

rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_-
screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_gmi_1d.F90 bufr_screen_nexrad.F90
bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 create_aer_clim_prof.F90
example_aer_file_fwd.F90 example_aer_param_fwd.F90 example_cld_file_fwd.F90
example_cld_param_fwd.F90 example_fwd.F90 example_htfrtc_fwd.F90 example_-
k.F90 example_pc_fwd.F90 example_rttovscatt_fwd.F90 gensatim.F90 old_screen_-
1c.F90 rttov_aer_clim_prof.F90 rttov_bpr_calc.F90 rttov_bpr_init.F90 rttov_-
conv_coef.F90 rttov_scatt_make_coef.F90 rttov_test.F90 rttov_test_get_pc_-
predictindex.F90 rttov_us76_prof.F90 rttovscatt_test.F90 rttovscatt_test_-
one.F90 rtlimb_hat.F90 rtlimb_hat_ad.F90 rtlimb_hat_tl.F90 rttov_distribute_-
coef.F90 rttov_distribute_coef_pccomp.F90 rttov_distribute_coef_scatt_ir.F90
rttov_distribute_coefs.F90 rttov_distribute_optpar_ir.F90 rttov_distribute_-
scattcoeffs.F90 rttov_channel_extract_mfasis.F90 rttov_channel_extract_pccoef.F90
rttov_channel_extract_scaercoef.F90 rttov_channel_extract_sccldcoef.F90 rttov_-
channel_extract_sublist.F90 rttov_dealloc_coef_htfrtc.F90 rttov_dealloc_coef_-
mfasis.F90 rttov_dealloc_coef_pccomp.F90 rttov_dealloc_coef_scatt_ir.F90 rttov_-
dealloc_coefs.F90 rttov_dealloc_optpar_ir.F90 rttov_distribute_coef_scatt_-
ir.F90 rttov_get_pc_predictindex.F90 rttov_init_coef.F90 rttov_init_coef_-
optpar_ir.F90 rttov_init_coef_pccomp.F90 rttov_nullify_coef_htfrtc.F90 rttov_-
nullify_coef_mfasis.F90 rttov_nullify_coef_pccomp.F90 rttov_nullify_coef_-
scatt_ir.F90 rttov_nullify_coefs.F90 rttov_nullify_optpar_ir.F90 rttov_read_-
ascii_coef.F90 rttov_read_ascii_mfasis_file.F90 rttov_read_ascii_pccoef.F90
rttov_read_ascii_scaercoef.F90 rttov_read_ascii_sccldcoef.F90 rttov_read_-
binary_mfasis_file.F90 rttov_read_binary_pccoef.F90 rttov_read_binary_scaercoef.F90
rttov_read_binary_sccldcoef.F90 rttov_read_coefs.F90 rttov_read_coefs_htfrtc.F90
rttov_write_ascii_coef.F90 rttov_write_ascii_mfasis_file.F90 rttov_write_-
ascii_pccoef.F90 rttov_write_ascii_scaercoef.F90 rttov_write_ascii_sccldcoef.F90
rttov_write_binary_mfasis_file.F90 rttov_write_binary_pccoef.F90 rttov_write_-
binary_scaercoef.F90 rttov_write_binary_sccldcoef.F90 rttov_write_coefs.F90
rttov_hdf_load.F90 rttov_hdf_save.F90 co2cld.F90 getcparam.F90 phrtsetup.F90
rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_-
ec_alloc_tl.F90 rttov_ec_setopts.F90 rttov_ec_tl.F90 rttvi.F90 rttov_ad.F90
rttov_add_aux_prof.F90 rttov_add_opt_param.F90 rttov_add_prof.F90 rttov_alloc_-
ad.F90 rttov_alloc_aux_prof.F90 rttov_alloc_auxrad.F90 rttov_alloc_direct.F90
rttov_alloc_ircld.F90 rttov_alloc_k.F90 rttov_alloc_mfasis_refl.F90 rttov_-
alloc_opt_param.F90 rttov_alloc_predictor.F90 rttov_alloc_prof.F90 rttov_-
alloc_prof_internal.F90 rttov_alloc_profiles_dom.F90 rttov_alloc_rad.F90 rttov_-
alloc_raytracing.F90 rttov_alloc_sunglint.F90 rttov_alloc_tl.F90 rttov_alloc_-
traj.F90 rttov_alloc_traj_dyn.F90 rttov_alloc_traj_sta.F90 rttov_alloc_trans_-
scatt_ir.F90 rttov_alloc_transmission_aux.F90 rttov_apply_pc_aer_reg_lims.F90
rttov_apply_pc_aer_reg_lims_ad.F90 rttov_apply_pc_aer_reg_lims_k.F90 rttov_-
apply_pc_aer_reg_lims_tl.F90 rttov_apply_reg_limits.F90 rttov_apply_reg_limits_-
ad.F90 rttov_apply_reg_limits_k.F90 rttov_apply_reg_limits_tl.F90 rttov_baran2014_-
calc_optpar.F90 rttov_baran2014_calc_optpar_ad.F90 rttov_baran2014_calc_optpar_-
tl.F90 rttov_calcbt.F90 rttov_calcbt_ad.F90 rttov_calcbt_tl.F90 rttov_calcemis_-
ir.F90 rttov_calcemis_ir_ad.F90 rttov_calcemis_ir_k.F90 rttov_calcemis_ir_-
tl.F90 rttov_calcemis_mw_ad.F90 rttov_calcemis_mw_k.F90 rttov_calcemis_mw_-
tl.F90 rttov_calcrad.F90 rttov_calcrad_ad.F90 rttov_calcrad_k.F90 rttov_calcrad_-

tl.F90 rttov_calcsatrefl.F90 rttov_calcsurfrefl.F90 rttov_calcsurfrefl_ad.F90
rttov_calcsurfrefl_k.F90 rttov_calcsurfrefl_tl.F90 rttov_check_options.F90
rttov_checkinput.F90 rttov_cldstr.F90 rttov_cldstr_ad.F90 rttov_cldstr_k.F90
rttov_cldstr_tl.F90 rttov_copy_aux_prof.F90 rttov_copy_opt_param.F90 rttov_-
copy_pccomp.F90 rttov_copy_prof.F90 rttov_direct.F90 rttov_dom.F90 rttov_-
dom_ad.F90 rttov_dom_k.F90 rttov_dom_setup_profile.F90 rttov_dom_setup_profile_-
ad.F90 rttov_dom_setup_profile_k.F90 rttov_dom_setup_profile_tl.F90 rttov_-
dom_tl.F90 rttov_erfcx.F90 rttov_init_aux_prof.F90 rttov_init_ircld.F90 rttov_-
init_opt_param.F90 rttov_init_predictor.F90 rttov_init_prof.F90 rttov_init_-
rad.F90 rttov_init_sunglint.F90 rttov_init_traj_sta.F90 rttov_init_trans_-
scatt_ir.F90 rttov_intavg_chan.F90 rttov_intavg_chan_ad.F90 rttov_intavg_-
chan_k.F90 rttov_intavg_chan_tl.F90 rttov_intavg_prof.F90 rttov_intavg_prof_-
ad.F90 rttov_intavg_prof_k.F90 rttov_intavg_prof_tl.F90 rttov_integrate.F90
rttov_integrate_ad.F90 rttov_integrate_k.F90 rttov_integrate_tl.F90 rttov_-
k.F90 rttov_locpat.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_-
tl.F90 rttov_mfasis.F90 rttov_mfasis_ad.F90 rttov_mfasis_k.F90 rttov_mfasis_-
tl.F90 rttov_mult_profiles_k.F90 rttov_mw_clw_absorption.F90 rttov_mw_clw_-
absorption_ad.F90 rttov_mw_clw_absorption_k.F90 rttov_mw_clw_absorption_tl.F90
rttov_nullify_prof.F90 rttov_opdep.F90 rttov_opdep_ad.F90 rttov_opdep_k.F90
rttov_opdep_tl.F90 rttov_opdpscattir.F90 rttov_opdpscattir_ad.F90 rttov_opdpscattir_-
k.F90 rttov_opdpscattir_tl.F90 rttov_opts_eq.F90 rttov_profaux.F90 rttov_-
profaux_ad.F90 rttov_profaux_k.F90 rttov_profaux_tl.F90 rttov_refsun.F90 rttov_-
refsun_ad.F90 rttov_refsun_k.F90 rttov_refsun_tl.F90 rttov_setpredictors_-
7.F90 rttov_setpredictors_78.F90 rttov_setpredictors_78_ad.F90 rttov_setpredictors_-
78_k.F90 rttov_setpredictors_78_tl.F90 rttov_setpredictors_7_ad.F90 rttov_-
setpredictors_7_k.F90 rttov_setpredictors_7_tl.F90 rttov_setpredictors_8.F90
rttov_setpredictors_8_ad.F90 rttov_setpredictors_8_k.F90 rttov_setpredictors_-
8_tl.F90 rttov_setpredictors_9.F90 rttov_setpredictors_9_ad.F90 rttov_setpredictors_-
9_k.F90 rttov_setpredictors_9_tl.F90 rttov_tl.F90 rttov_transmit.F90 rttov_-
transmit_9_solar.F90 rttov_transmit_9_solar_ad.F90 rttov_transmit_9_solar_-
k.F90 rttov_transmit_9_solar_tl.F90 rttov_transmit_ad.F90 rttov_transmit_-
k.F90 rttov_transmit_tl.F90 rttov_user_options_checkinput.F90 rttov_user_-
profile_checkinput.F90 rttov_add_scatt_prof.F90 rttov_alloc_emis_ret_terms.F90
rttov_boundaryconditions.F90 rttov_boundaryconditions_ad.F90 rttov_boundaryconditions
tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90 rttov_eddington_ad.F90
rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_-
ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_-
tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_-
integratesource.F90 rttov_integratesource_ad.F90 rttov_integratesource_tl.F90
rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_tl.F90 rttov_nullify_-
scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_scatt_emis_retrieval.F90
rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_
test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90
ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90
mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_-
gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90
predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_-
spectra.F90 vol_fracs.F90 rttov_coef_info.F90 rttov_mfasis_lut_info.F90 rttov_-

print_cld_profile.F90 rttov_print_opts.F90 rttov_print_opts_scatt.F90 rttov_-
print_profile.F90 rttov_print_radiance_quality.F90 rttov_parallel_ad.F90 rttov_-
parallel_direct.F90 rttov_parallel_k.F90 rttov_parallel_scatt.F90 rttov_parallel_-
scatt_ad.F90 rttov_parallel_scatt_tl.F90 rttov_parallel_tl.F90 rttov_k_ad.F90
rttov_k_bf.F90 rttov_k_tl.F90 rttov_make_cld_profile_inc.F90 rttov_make_emisrefl_-
inc.F90 rttov_make_opt_param.F90 rttov_make_opt_param_inc.F90 rttov_make_-
pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_-
scale_cld_profile_inc.F90 rttov_scale_opt_param_inc.F90 rttov_scale_pccomp_-
inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_-
test.F90

Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_-
fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_-
windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_-
bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_-
fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h
surfws.h osm.cfg srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90
srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_-
mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_-
ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 suvexc_-
mod.F90 vexcs_mod.F90 vlamsk_mod.F90 vsurf_mod.F90 yos_exc.F90 callpar1s.F90
cpg1s.F90 dtforc.F90 netcdf_utils.F90 rdsupr.F90 suct01s.F90 sudcdf.F90 sugdi1s.F90
sugp1s.F90 suinif1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90
wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 mpl_mod_ctl.F90

Files modified (TRANS): dealloc_resol_mod.F90

Files modified (WAM): getclo.F uras3a.F abort1.F abort1.F90 adjust.F adjust.F90
airsea.F airsea.F90 aki.F aki.F90 aki_ice.F aki_ice.F90 altas.F90 avoidpeaks.F
avoidpeaks.F90 betadef.F betadef.F90 bouinpt.F bouinpt.F90 bouint.F bouint.F90
buildstress.F buildstress.F90 cal_second_order_spec.F cal_second_order_spec.F90
check.F check.F90 checkcfl.F checkcfl.F90 chesig.F chesig.F90 chief.F chief.F90
cigetdeac.F cigetdeac.F90 cimsstrn.F cimsstrn.F90 cireduce.F cireduce.F90 ciwabr.F
ciwabr.F90 ciwaf.F ciwaf.F90 class_wgrib.F clean_outbs.F closend.F closend.F90
combinepeaks.F combinepeaks.F90 command.F confile.F confile.F90 cpfdb.F create_-
wam_bathymetry.F create_wam_bathymetry.F90 create_wam_bathymetry_ETOPO1.F create_-
wam_bathymetry_ETOPO1.F90 crossas.F crossas.F90 crossw.F crossw.F90 ctuw.F
ctuw.F90 current2wam.F current2wam.F90 decode_integrated_parameter.F decode_-
integrated_parameter.F90 decode_point_spectra.F decode_point_spectra.F90 dev.F
dev.F90 difdate.F difdate.F90 docombine.F docombine.F90 dotdc.F dotdc.F90 dummy_-
alt.F dummy_alt.F90 dummy_cray.F dummy_eclib.F dummy_eclib.F90 dummy_fdb.F
dummy_fdb.F90 dummy_mp.F dummy_mp.F90 dummy_no_assimil.F dummy_no_assimil.F90
dummy_no_nemo.F dummy_no_nemo.F90 ersfile.F ersfile.F90 expand_string.F expand_-
string.F90 fdur.F fdur.F90 femean.F femean.F90 femeanws.F femeanws.F90 file_-
transfer.F file_transfer.F90 fillgaps.F fillgaps.F90 findb.F findb.F90 fkmean.F

fkmean.F90 fld2wam.F fld2wam.F90 fldinter.F fldinter.F90 fndprt.F fndprt.F90
frcutindex.F frcutindex.F90 fustar.F fustar.F90 fwsea.F fwsea.F90 gapinterpol.F
gapinterpol.F90 get_preset_wgrib_template.F90 getcurr.F getcurr.F90 getspec.F
getspec.F90 getstress.F getstress.F90 getwnd.F getwnd.F90 getwspec.F getwspec.F90
gradi.F gradi.F90 grdata.F grdata.F90 grfield.F90 grib2wgrid.F grib2wgrid.F90
grstname.F grstname.F90 gsfile_new.F gsfile_new.F90 h_max.F h_max.F90 halfspread.F
halfspread.F90 headbc.F headbc.F90 ifstowam.F ifstowam.F90 imphftail.F90 implsch.F
implsch.F90 incdate.F incdate.F90 inisnonlin.F inisnonlin.F90 init_fieldg.F
init_fieldg.F90 init_sdiss_ardh.F90 init_x0tauhf.F init_x0tauhf.F90 initialint.F
initialint.F90 initmdl.F initmdl.F90 initnemocpl.F initnemocpl.F90 iniwcst.F
iniwcst.F90 intpol.F intpol.F90 intspec.F intspec.F90 intwaminput.F intwaminput.F90
inwgrib.F inwgrib.F90 iwam_get_unit.F90 jafu.F jafu.F90 jonswap.F jonswap.F90
kerkei.F kerkei.F90 kgribsize.F kgribsize.F90 kurtosis.F kurtosis.F90 kzeone.F
kzeone.F90 lasttwobins.F lasttwobins.F90 llalloc_grdfld.F loc2glo.F lowenergy.F
lowenergy.F90 makeframes.F makeframes.F90 makegrid.F makegrid.F90 mblock.F
mblock.F90 mbounc.F mbounc.F90 mbounf.F mbounf.F90 mboxb.F mboxb.F90 mcout.F
mcout.F90 means.F means.F90 meansqs.F meansqs.F90 mergesarcor.F mergesarcor.F90
mfredir.F mfredir.F90 mgrid.F mgrid.F90 micep.F micep.F90 mintf.F mintf.F90
mnintw.F mnintw.F90 mpabort.F mpabort.F90 mpbcastgrdfld.F mpbcastgrid.F mpbcastgrid.F
mpbcastintfld.F mpbcastintfld.F90 mpbcastsarin.F mpbcastsarin.F90 mpbcastscfld.F
mpclose_unit.F mpclose_unit.F90 mpcrtbl.F mpcrtbl.F90 mpdecomp.F mpdecomp.F90
mpdistribfl.F mpdistribfl.F90 mpdistribscfld.F mpdistribscfld.F90 mpexchng.F
mpexchng.F90 mpexchngsarin.F mpexchngsarin.F90 mpfldtoifs.F mpfldtoifs.F90
mpgatherbc.F mpgatherbc.F90 mpgatherersfile.F mpgatherersfile.F90 mpgatherfl.F
mpgatherfl.F90 mpgathergrdfld.F mpgatherscfld.F mpgatherscfld.F90 mpgatherspp.F
mpmdl4alt.F90 mpminmaxavg.F90 mppewithindist.F mppewithindist.F90 mpuserin.F
mpuserin.F90 mstart.F mstart.F90 mtabs.F mtabs.F90 mubuf.F mubuf.F90 mwp1.F
mwp1.F90 mwp2.F mwp2.F90 newwind.F newwind.F90 nlweigt.F nlweigt.F90 notim.F
notim.F90 oifield.F oifield.F90 onestepapart.F onestepapart.F90 optint.F optint.F90
out_onegrdpt.F out_onegrdpt.F90 out_onegrdpt_sp.F out_onegrdpt_sp.F90 outbc.F
outbc.F90 outbeta.F outbeta.F90 outblock.F90 outbs.F outbs.F90 outcom.F outcom.F90
outers.F outers.F90 outgrid.F outgrid.F90 outint.F outint.F90 outint_io_serv.F90
outnam.F outnam.F90 outpp.F outpp.F90 outsetwmask.F90 outspec.F90 outspp.F
outunwamfield.F outunwamfield.F90 outunwamtest.F outunwamtest.F90 outwint.F90
outwnorm.F outwnorm.F90 outwpsp.F90 outwspec.F outwspec.F90 outwspec_io_serv.F90
outxt.F outxt.F90 packi.F packi.F90 packr.F packr.F90 parmean.F parmean.F90
partitioning.F partitioning.F90 peak.F peak.F90 peak_ang.F90 peak_freq.F peak_-
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runwam.F90 saras.F saras.F90 savrest.F savspec.F savspec.F90 savstress.F savstress.F9
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secondhh.F90 secondhh_gen.F secondhh_gen.F90 secspom.F secspom.F90 semean.F
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phi_hf.F90 tauhf.F taut_z0.F taut_z0.F90 threshhold.F threshhold.F90 timin.F
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wam_sorti.F90 wam_sortini.F90 wam_syminv.F wam_syminv.F90 wam_u2l1cr.F wam_-
u2l1cr.F90 wam_user_clock.F wam_user_clock.F90 wamadszidl.F wamadszidl.F90
wamassi.F wamassi.F90 wamcur.F wamcur.F90 wamendnemoio.F90 wamininemoio.F wamininemoi
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mbounc.intfb.h mbounf.intfb.h mboxb.intfb.h mcout.intfb.h means.intfb.h meansqs.intfb
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mtabs.intfb.h mubuf.intfb.h mwp1.intfb.h mwp2.intfb.h newwind.intfb.h nlweigt.intfb.h
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z0wave.intfb.h coupling_var.F90 output_struct.F90 pgmcl_lib_wam.F90 unstruct_-
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netcdf_fct.F90 wav_netcdf_var.F90 yow_rank_gloloc.F90 yowaltas.F yowaltas.F90

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yowfpbo.F90 yowfred.F yowfred.F90 yowgap.F yowgap.F90 yowgrib_handles.F yowgrib_-
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Patricia de Rosnay - dap_CY45R2_ssafix - NON-METEOROLOGICAL

bug fix in screen level (rh2m) analysis (IFS-620)

In ssaana, conversion of METAR stid into very large floating numbers affect the surface analysis. This issue affects the quality control of the relative humidity which rejects most manual METAR.

Experiments are ongoing:

h24y: crtl 46r1 v8

h2gs: bug fix, will lead to assimilate rh2ana manual metar data, so it may have a slight meteorological impact

h2gw: bug fix plus blacklist change to not use manual metar rh2ana to make the bug fix neutral

Experiments from both experiments show a neutral impact on both scores and obstat:

file:///perm/rd/dap/iver/plots/h24y_h2gs_h2gw/index.html

Therefore I recommend to implement the bug fix as it (fortran change in dap_CY45r2_ssafix), without the blacklist change.

Files modified (AEOLUS): arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_-
l2bp_primary_ec.F90

Files modified (ALGOR): minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_-
caller.h m1qn3a.F90

Files modified (ATLAS_APPS): CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_-
module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_-
module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_-
module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90

dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_-weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_-sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_-wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_module.F90

Files modified (BL): dynamic_symbols.c mf_blacklist.b

Files modified (CMAKE): algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake fieldman.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake prepdata.cmake satrad.cmake ssa.cmake target_ignore_missing_symbols.cmake trans.cmake wam.cmake

Files modified (DUMMY): aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_-suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_-horiz_flt.F suefpbip.F sueinfce.F

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90

Files modified (FIELDMAN): FieldSet.hpp

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90 cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_-gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_-dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90 cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90 cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 fv_gradient.F90 gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_-spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90 gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90 gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_-conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90 gnhqe_tndlagadiab_gw.F90 gnhqe_tndlagadiab_svd.F90 gnhqe_xxd.F90 gnhsvd2gw.F90 gnhx.F90 gp_derivatives.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_-kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90 gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90 gpgw.F90 gphpre.F90 gpinislb.F90 gpmktend.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90 gprcph.F90 gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90 gpvcts.F90 gpvcw.F90 gpxx.F90 lacdyn.F90 lacdynad.F90 lacdynshw.F90 lacdynshwad.F90 lacdynshwtl.F90 lacdyntl.F90 ladad.F90 ladine.F90 ladinead.F90 ladinetl.F90 laitre_gfl_ad.F90 laitre_gmv.F90 lanhqesi.F90 lanhsi.F90 lanhsib.F90 lapinea.F90 lapinea5.F90 lapineaad.F90 lapineatl.F90 lapineb.F90 lapinebad.F90 lapinebtl.F90 larche.F90 larche5.F90 larche_incr.F90 larche_incr_ad.F90 larche_incr_tl.F90 larchead.F90 larchetl.F90 larcin2.F90 larcin2ad.F90 larcin2tl.F90 larcina.F90 larcinaad.F90 larcinatl.F90 larcinb.F90 larcinbad.F90 larcinha.F90 larcinhb.F90 larmes.F90 larmes5.F90 larmes_rk.F90 larmes_rk5.F90 larmes_rk_ad.F90 larmes_rk_tl.F90 larmesad.F90 larmestl.F90 lassie.F90 lassietl.F90 latte_bbc.F90 latte_kappa.F90 latte_kappaad.F90 latte_kappatl.F90 lattes.F90 lattesad.F90 lattestl.F90 lattex.F90 lavabo.F90 lavabotl.F90 lavent.F90 laventad.F90 laventtl.F90 postphy.F90 si_-

cccor.F90 sidd.F90 sigam.F90 silkap.F90 silkapi.F90 sinhqe_seve.F90 sinhqe_-
vderi.F90 siptp.F90 siqq.F90 siseve.F90 siskap.F90 siskapi.F90 sitnu.F90 spchor.F90
spcsi.F90 spnh_conv_nhvar.F90 spnh_conv_prhs.F90 spnhqesi.F90 spnhqesi_prodskap.F90
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ecoupl2.intfb.h ecoupl2ad.intfb.h ecvargpad.intfb.h ecvargptl.intfb.h ediagb_-
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tl.F90 aer_drydepvel.F90 aer_no3nh4.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90
aer_phy3_layer.F90 aer_rad.F90 aer_radon.F90 aer_resuspension.F90 aer_rrtm.F90
aer_scavin.F90 aer_sdust.F90 aer_sedim.F90 aer_so2so4.F90 aer_so2so4_v2.F90
aer_src.F90 aer_ssalt.F90 aer_ssalt_grythe.F90 aer_ssalt_ms.F90 aer_tau.F90
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cloudvar.F90 compo_flux_update.F90 cos_sza.F90 cpspe.F90 cubasen.F90 cubasen2.F90
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surf_res1.F90 ddr_we_season.F90 depvel_wsl.F90 diag_clouds.F90 ec_phys.F90
ec_phys_ad.F90 ec_phys_drv.F90 ec_phys_drv_ad.F90 ec_phys_drv_tl.F90 ec_phys_-
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su1yom.F90 su_grib_api.F90 su_surf_flds.F90 suafn.F90 suafn1.F90 suafn2.F90
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grtest.F90 inflation_pert.F90 jb_wav_var.F90 jbtoacv.F90 jbtomodel.F90 jbtomodelad.F90
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Files modified (IFSAUX): comcha.h comdat.h comddh.h ctlarch.F ctldompf.F ctldomts.F
ctlzon.F decops2.F description_table.dat getarea.F getcom1.F getcom2.F getdom.F
getrec.F getreci.F getzon.F incdat.F invjul.F julday.F namus.h offset.F opone.F
param.h rearec.F suarch.F sucom.F sucom2.F swapts.F i_system.c facgrm.F90 fadgra.F90
fagote.F90 faieno.h falgra.h faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.
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yomlun_ifsaux.F90 ddhrun.F faconvgrib.F90 splitps.F abor1.F90 dr_hook_util.F90
drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt History.txt VERSION.cmake config.sh README.md
cat_dbase.md dbase_view_mod.md generate_docs.sh match_dbase.md CMakeLists.txt
CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 netcdf_file_mod.F90 quicksort_-
mod.F90 dbase_factory_mod.F90 hdf_dbase_mod.F90 odb1_dbase_mod.F90 odb2_dbase_-
mod.F90 odbserver_dbase_mod.F90 dbase_kinds_mod.F90 dbase_view_mod.F90 CMakeLists.txt
map_dbase_mod.F90 mapping_aux_funcs.F90 mapping_parser_mod.F90 mappings_mod.F90
match_dbase_mod.F90 partition_dbase_mod.F90 CMakeLists.txt cat_dbase.F90 match_-
dbase.F90 CMakeLists.txt nc_sample_map_dbase.cdl test_map_dbase_bufr_mapping.dat
test_map_dbase_mapping.dat test_convert_dbase_odb1.sh test_cope_repartitioning.F90
test_dbase_performance.F90 test_dbase_view.F90 test_join_views.F90 test_ll.F90
test_match_dbase.sh test_overhead_odb2.F90 test_parallel_distribute.F90 test_-
quicksort.F90

Files modified (NEMO): CMakeLists.txt diahth.F90 divcur.F90 dynhpg.F90 dynldf_-
bilap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 lib_-
mpp.F90 ldfslp.F90 obs_grd_bruteforce.h90 solpcg.F90 eosbn2.F90 traadv.F90
traadv_tvd.F90 tradmp.F90 traldf_iso.F90 zdfddm.F90 zdfmxl.F90 zdftke.F90 zdftmx.F90
lib_fortran.F90 arch-IBM_EKMAN_INGV.fcm namelist_cfg CFCs_CMIP6.dat cfc1112.atm
iodef.xml namelist_age_cfg namelist_age_ref namelist_cfg cpp_ORCA2_LIM_CFC_-
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simocn_gauss_to_atm_4pt_cca.ksh remap_simocn_gauss_to_atm_oasis3_cca.ksh simocngausst
cray_inner.ksh cray_mppcomb.ksh cray_outer.ksh getecfstestdata.ksh namelist.nemo.ORCA
Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_ORCA1_Z46 setup_namelist_outer_ORCA1_Z75 setup_namelist_outer_io setup_-
outer_data swan_inner.ksh swan_outer.ksh cray_outer.ksh getecfstestdata.ksh
field_def.xml field_def_xios2.xml iodef_default.xml iodef_default_xios2.xml
iodef_single_xios2.xml namelist_cfg.ORCA025_Z75 namelist_cfg.ORCA1_Z42 namelist_-
ice_cfg.ORCA025 namelist_ice_cfg.ORCA1 namelist_ref ompi_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_io setup_namelist_xios setup_outer_data cdfmoc.f90 CMakeLists.txt config.macpor
Makefile config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90
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go66go65_ua.ksh amona_go66go65_waves.ksh omona_go66_1h.ksh omona_go66_3h.ksh
plot_10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh
plot_sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
oras5_sst_2017.ksh omona_ostia_sst_2017.ksh plot_sst_2017.ksh retrieve_oras4_-
sst_2017.ksh retrieve_oras5_sst_2017.ksh retrieve_ostia_sst_2017.ksh standard_-
areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
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fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
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omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
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plot.F90 plotsoft.F90 updsoft.F90 writegridstats.F90 writescat.F90 writesoft.F90

Files modified (ODB): CMakeLists.txt cma_open.c b2o_amend.F90 b2o_convert.F90 b2o_-
convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_-
atovs.F90 b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_gmi.F90 b2o_-
convert_grad.F90 b2o_convert_iasi.F90 b2o_convert_modisaer.F90 b2o_convert_-
msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_oscat.F90 b2o_convert_pilot.F90
b2o_convert_rain_rates.F90 b2o_convert_reo3.F90 b2o_convert_ssmis_1d.F90 b2o_-
convert_synop_land.F90 b2o_convert_tamdar.F90 b2o_convert_temp.F90 b2o_convert_-
temp_hires.F90 b2o_convert_windprofiler.F90 b2o_crc.c calc_azim.F90 get_varindex.F90
odb_target_ignore_missing_symbols.cmake genc.c sat_atovs_hyper.sql scat_ambig_-
select.sql sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_-
4.sql decis_robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h
sat_atovs.sql sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h
b2o_debug.h cmaio.h odb_assoc_cols.h odb_it_members.h calc_azim.h codb.c datastream.F
twindow.c b2o_functional.F90 b2o_get.F90 b2o_utility.F90 varindex_module.F90
bator_datetime_mod.F90 bator_decodbufr_mod.F90 bator_decodgrib_mod.F90 bator_-

decodhdf5_mod.F90 bator_decodnetcdf_mod.F90 bator_ecritures_mod.F90 bator_-
impr_mod.F90 bator_init_mod.F90 bator_lectures_mod.F90 bator_module.F90 bator_-
rad_postproc_mod.F90 bator_saisies_mod.F90 bator_util_mod.F90 bator_namelist.nam.h
ecma2ecmascr Bator.F90 Convert_dbase.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h
AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria
AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90
FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h
GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc
IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.
IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF
LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h
LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 Logbook.interface.F90
LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h
ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h
ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte
ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90
ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen
ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.c
ObsBiasIncrementVARBC.h ObsBiasIncrementVARBC.interface.F90 ObsBiasLListsTOVSCV.F90
ObsBiasLListsVARBC.F90 ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90
ObsBiasVARBC.cc ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsSpaceODB.cc ObsSpaceODB.
ObsSpaceODB.interface.F90 ObsVector.cc ObsVector.h ObsVector.interface.F90
StateIFS.cc StateIFS.h Trajectory.list.F90 VariablesIFS.interface.F90 ifs_-
init_wrapper.F90 instantiateObsAuxFactories.h instantiateObsErrorFactory.h
instantiateObsOpFactories.h instantiateTlmFactory.h mpi_wrapper.F90 pm_link_-
mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): matutils.F90 chgrib.c fillgaussgrib.F90 unbal_eda.F90
wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90
radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-
gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-
ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-
optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-
mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-
optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-
save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-
spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90
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Files modified (SATRAD): throw.h find_lsm.h get_lsm.h getcparam.h cparam.F90 gaussgrid.F90 mod_camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_mie.F90 mod_mwatlas_m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_atlas.F90 mod_rttov_fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_test.F90 mod_screen_1c_bufrmsg.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90 rttov_chain.F90 rttov_coef_io_mod.F90 rttov_ec_settings.F90 rttov_fast_coef_utils_mod.F90 rttov_getoptions.F90 rttov_global.F90 rttov_hdf_chanprof_io.F90 rttov_hdf_coefs.F90 rttov_hdf_emissivity_io.F90 rttov_hdf_options_config_io.F90 rttov_hdf_options_rt_all_io.F90 rttov_hdf_options_rt_ir_io.F90 rttov_hdf_options_rt_mw_io.F90 rttov_hdf_profile_io.F90 rttov_hdf_profiles.F90 rttov_hdf_radiance_io.F90 rttov_hdf_reflectance_io.F90 rttov_hdf_rttov_coef_io.F90 rttov_hdf_rttov_coef_pcc_io.F90 rttov_htfrtc_interface_mod.F90 rttov_interface_mod.F90 rttov_lapack_mod.F90 rttov_math_mod.F90 rttov_scattering_mod.F90 rttov_solar_refl_mod.F90 rttov_tessem_mod.F90 rttov_test_k_mod.F90 rttov_test_mod.F90 rttov_types.F90 rttov_unix_env.F90 rttov_zutility.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_gmi_1d.F90 bufr_screen_nexrad.F90 bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 create_aer_clim_prof.F90 example_aer_file_fwd.F90 example_aer_param_fwd.F90 example_cld_file_fwd.F90 example_cld_param_fwd.F90 example_fwd.F90 example_htfrtc_fwd.F90 example_k.F90 example_pc_fwd.F90 example_rttovscatt_fwd.F90 gensatim.F90 geos_prescreen.F90 old_screen_1c.F90 rttov_aer_clim_prof.F90 rttov_bpr_calc.F90 rttov_bpr_init.F90 rttov_coef_info.F90 rttov_conv_coef.F90 rttov_scatt_make_coef.F90 rttov_test.F90 rttov_test_get_pc_predictindex.F90 rttov_us76_prof.F90 rttovscatt_test.F90 rttovscatt_test_one.F90 rtlimb_hat.F90 rtlimb_hat_ad.F90 rtlimb_hat_tl.F90 rttov_distribute_coef.F90 rttov_distribute_coef_pccomp.F90 rttov_distribute_coef_scatt_ir.F90 rttov_distribute_coefs.F90 rttov_distribute_optpar_ir.F90 rttov_distribute_scattcoeffs.F90 rttov_channel_extract_mfasis.F90 rttov_channel_extract_pccoef.F90 rttov_channel_extract_scaercoef.F90 rttov_channel_extract_sccldcoef.F90 rttov_channel_extract_sublist.F90 rttov_dealloc_coef_htfrtc.F90 rttov_dealloc_coef_mfasis.F90 rttov_dealloc_coef_pccomp.F90 rttov_dealloc_coef_scatt_ir.F90 rttov_dealloc_coefs.F90 rttov_dealloc_optpar_ir.F90 rttov_distribute_coef_scatt_ir.F90 rttov_get_pc_predictindex.F90 rttov_init_coef.F90 rttov_init_coef_optpar_ir.F90 rttov_init_coef_pccomp.F90 rttov_nullify_coef_htfrtc.F90 rttov_nullify_coef_mfasis.F90 rttov_nullify_coef_pccomp.F90 rttov_nullify_coef_scatt_ir.F90 rttov_nullify_coefs.F90 rttov_nullify_optpar_ir.F90 rttov_read_ascii_coef.F90 rttov_read_ascii_mfasis_file.F90 rttov_read_ascii_pccoef.F90 rttov_read_ascii_scaercoef.F90 rttov_read_ascii_sccldcoef.F90 rttov_read_binary_mfasis_file.F90 rttov_read_binary_pccoef.F90 rttov_read_binary_scaercoef.F90 rttov_read_binary_sccldcoef.F90 rttov_read_coefs.F90 rttov_read_coefs_htfrtc.F90 rttov_write_ascii_coef.F90 rttov_write_ascii_mfasis_file.F90 rttov_write_ascii_pccoef.F90 rttov_write_ascii_scaercoef.F90 rttov_write_ascii_sccldcoef.F90 rttov_write_binary_mfasis_file.F90 rttov_write_binary_pccoef.F90 rttov_write_binary_scaercoef.F90 rttov_write_binary_sccldcoef.F90 rttov_write_coefs.F90 rttov_hdf_load.F90 rttov_hdf_save.F90 co2cld.F90 getcparam.F90 phrtsetup.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_setopts.F90 rttov_ec_tl.F90 rttvi.F90

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calcemis_ir_k.F90 rttov_calcemis_ir_tl.F90 rttov_calcemis_mw_ad.F90 rttov_-
calcemis_mw_k.F90 rttov_calcemis_mw_tl.F90 rttov_calcrad.F90 rttov_calcrad_-
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k.F90 rttov_dom_setup_profile_tl.F90 rttov_dom_tl.F90 rttov_erfcx.F90 rttov_-
init_aux_prof.F90 rttov_init_ircld.F90 rttov_init_opt_param.F90 rttov_init_-
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intavg_prof.F90 rttov_intavg_prof_ad.F90 rttov_intavg_prof_k.F90 rttov_intavg_-
prof_tl.F90 rttov_integrate.F90 rttov_integrate_ad.F90 rttov_integrate_k.F90
rttov_integrate_tl.F90 rttov_k.F90 rttov_locpat.F90 rttov_locpat_ad.F90 rttov_-
locpat_k.F90 rttov_locpat_tl.F90 rttov_mfasis.F90 rttov_mfasis_ad.F90 rttov_-
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absorption_tl.F90 rttov_nullify_prof.F90 rttov_opdep.F90 rttov_opdep_ad.F90
rttov_opdep_k.F90 rttov_opdep_tl.F90 rttov_opdpscattir.F90 rttov_opdpscattir_-
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profaux.F90 rttov_profaux_ad.F90 rttov_profaux_k.F90 rttov_profaux_tl.F90 rttov_-
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9_k.F90 rttov_setpredictors_9_tl.F90 rttov_tl.F90 rttov_transmit.F90 rttov_-
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k.F90 rttov_transmit_9_solar_tl.F90 rttov_transmit_ad.F90 rttov_transmit_-
k.F90 rttov_transmit_tl.F90 rttov_user_options_checkinput.F90 rttov_user_-

profile_checkinput.F90 rttov_add_scatt_prof.F90 rttov_alloc_emis_ret_terms.F90
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tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90 rttov_eddington_ad.F90
rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_-
ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_-
tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_-
integratesource.F90 rttov_integratesource_ad.F90 rttov_integratesource_tl.F90
rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_tl.F90 rttov_nullify_-
scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_scatt_emis_retrieval.F90
rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_-
test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90
ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90
mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_-
gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90
predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_-
spectra.F90 vol_fracs.F90 rttov_coef_info.F90 rttov_mfasis_lut_info.F90 rttov_-
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inc.F90 rttov_make_opt_param.F90 rttov_make_opt_param_inc.F90 rttov_make_-
pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_-
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inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_-
test.F90

Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_-
fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_-
windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_-
bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_-
fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 scan_cma_odb.F90 ssa.F90
setcomssa.F90

Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h
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srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_-
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ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 suvexc_-
mod.F90 vexcs_mod.F90 vlamsk_mod.F90 vsurf_mod.F90 yos_exc.F90 callpar1s.F90
cpg1s.F90 dtforc.F90 incdat.F90 netcdf_utils.F90 rdfvar.F90 rdsupr.F90 sucst.F90
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Files modified (TRANS): dealloc_resol_mod.F90

Files modified (WAM): getclo.F uras3a.F abort1.F abort1.F90 adjust.F adjust.F90 airsea.F airsea.F90 aki.F aki.F90 aki_ice.F aki_ice.F90 altas.F90 avoidpeaks.F avoidpeaks.F90 betadef.F betadef.F90 bouinpt.F bouinpt.F90 bouint.F bouint.F90 buildstress.F buildstress.F90 cal_second_order_spec.F cal_second_order_spec.F90 check.F check.F90 checkcfl.F checkcfl.F90 chesig.F chesig.F90 chief.F chief.F90 cigetdeac.F cigetdeac.F90 cimsstrn.F cimsstrn.F90 cireduce.F cireduce.F90 ciwabr.F ciwabr.F90 ciwaf.F ciwaf.F90 class_wgrib.F clean_outbs.F closend.F closend.F90 combinepeaks.F combinepeaks.F90 command.F confile.F confile.F90 cpfdb.F create_wam_bathymetry.F create_wam_bathymetry.F90 create_wam_bathymetry_ETOPO1.F create_wam_bathymetry_ETOPO1.F90 crossas.F crossas.F90 crossw.F crossw.F90 ctuw.F ctuw.F90 current2wam.F current2wam.F90 decode_integrated_parameter.F decode_integrated_parameter.F90 decode_point_spectra.F decode_point_spectra.F90 dev.F dev.F90 difdate.F difdate.F90 docombine.F docombine.F90 dotdc.F dotdc.F90 dummy_alt.F dummy_alt.F90 dummy_cray.F dummy_eclib.F dummy_eclib.F90 dummy_fdb.F dummy_fdb.F90 dummy_mp.F dummy_mp.F90 dummy_no_assimil.F dummy_no_assimil.F90 dummy_no_nemo.F dummy_no_nemo.F90 ersfile.F ersfile.F90 expand_string.F expand_string.F90 fdur.F fdur.F90 femean.F femean.F90 femeanws.F femeanws.F90 file_transfer.F file_transfer.F90 fillgaps.F fillgaps.F90 findb.F findb.F90 fkmean.F fkmean.F90 fld2wam.F fld2wam.F90 fldinter.F fldinter.F90 fndprt.F fndprt.F90 frcutindex.F frcutindex.F90 fustar.F fustar.F90 fwsea.F fwsea.F90 gapinterpol.F gapinterpol.F90 get_preset_wgrib_template.F90 getcurr.F getcurr.F90 getspec.F getspec.F90 getstress.F getstress.F90 getwnd.F getwnd.F90 getwspec.F getwspec.F90 gradi.F gradi.F90 grdata.F grdata.F90 grfield.F90 grib2wgrid.F grib2wgrid.F90 grstname.F grstname.F90 gsfile_new.F gsfile_new.F90 h_max.F h_max.F90 halfspread.F halfspread.F90 headbc.F headbc.F90 ifstowam.F ifstowam.F90 imphftail.F90 implsch.F implsch.F90 incdate.F incdate.F90 inisnonlin.F inisnonlin.F90 init_fieldg.F init_fieldg.F90 init_sdiss_ardh.F90 init_x0tauhf.F init_x0tauhf.F90 initialint.F initialint.F90 initmdl.F initmdl.F90 initnemocpl.F initnemocpl.F90 iniwcst.F iniwcst.F90 intpol.F intpol.F90 intspec.F intspec.F90 intwaminput.F intwaminput.F90 inwgrib.F inwgrib.F90 iwam_get_unit.F90 jafu.F jafu.F90 jonswap.F jonswap.F90 kerkei.F kerkei.F90 kgribsize.F kgribsize.F90 kurtosis.F kurtosis.F90 kzeone.F kzeone.F90 lasttwobins.F lasttwobins.F90 llalloc_grdfld.F loc2glo.F lowenergy.F lowenergy.F90 makeframes.F makeframes.F90 makegrid.F makegrid.F90 mblock.F mblock.F90 mbounc.F mbounc.F90 mbounf.F mbounf.F90 mboxb.F mboxb.F90 mcout.F mcout.F90 means.F means.F90 meansqs.F meansqs.F90 mergesarcor.F mergesarcor.F90 mfredir.F mfredir.F90 mgrid.F mgrid.F90 micep.F micep.F90 mintf.F mintf.F90 mnintw.F mnintw.F90 mpabort.F mpabort.F90 mpbcastgrdfld.F mpbcastgrid.F mpbcastgrid.F mpbcastintfld.F mpbcastintfld.F90 mpbcastsarin.F mpbcastsarin.F90 mpbcastscfld.F mpclose_unit.F mpclose_unit.F90 mpcrtbl.F mpcrtbl.F90 mpdecomp.F mpdecomp.F90 mpdistribfl.F mpdistribfl.F90 mpdistribscfld.F mpdistribscfld.F90 mpexchng.F mpexchng.F90 mpexchngsarin.F mpexchngsarin.F90 mpfldtoifs.F mpfldtoifs.F90 mpgatherbc.F mpgatherbc.F90 mpgatherersfile.F mpgatherersfile.F90 mpgatherfl.F mpgatherfl.F90 mpgathergrdfld.F mpgatherscfld.F mpgatherscfld.F90 mpgatherspp.F mpmdl4alt.F90 mpminmaxavg.F90 mppewithindist.F mppewithindist.F90 mpuserin.F mpuserin.F90 mstart.F mstart.F90 mtabs.F mtabs.F90 mubuf.F mubuf.F90 mwp1.F mwp1.F90 mwp2.F mwp2.F90 newwind.F newwind.F90 nlweigt.F nlweigt.F90 notim.F notim.F90 oifield.F oifield.F90 onestepapart.F onestepapart.F90 optint.F optint.F90 out_onegrdpt.F out_onegrdpt.F90 out_onegrdpt_sp.F out_onegrdpt_sp.F90 outbc.F

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outunwamfield.F outunwamfield.F90 outunwamtest.F outunwamtest.F90 outwint.F90
outwnorm.F outwnorm.F90 outwpsp.F90 outwspec.F outwspec.F90 outwspec_io_serv.F90
outxt.F outxt.F90 packi.F packi.F90 packr.F packr.F90 parmean.F parmean.F90
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runwam.F90 saras.F saras.F90 savrest.F savspec.F savspec.F90 savstress.F savstress.F9
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secondhh.F90 secondhh_gen.F secondhh_gen.F90 secspom.F secspom.F90 semean.F
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phi_hf.F90 tauhf.F taut_z0.F taut_z0.F90 threshhold.F threshhold.F90 timin.F
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z0wave.intfb.h coupling_var.F90 output_struct.F90 pgmcl_lib_wam.F90 unstruct_-
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yowfpbo.F90 yowfred.F yowfred.F90 yowgap.F yowgap.F90 yowgrib_handles.F yowgrib_-
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yowspec.F yowspec.F90 yowstat.F yowstat.F90 yowswel.F yowtabl.F yowtabl.F90
yowtemp.F yowtemp.F90 yowtest.F yowtest.F90 yowtext.F yowtext.F90 yowtrains.F
yowtrains.F90 yowubuf.F yowubuf.F90 yowunit.F yowunit.F90 yowunpool.F yowunpool.F90
yowwami.F yowwami.F90 yowwind.F yowwind.F90 yowwndg.F yowwndg.F90
```

Andrew Dawson - diad_CY45R2_fix_wave_save - BIT IDENTICAL

The wave_save script references a possibly undefined variable (IFS-623)

The wave_save script used to save wave model output contains a reference the the variable $LCONTINUOUS_DA. This variable is not defined in non-DA configurations of IFS (e.g. standalone WAM) and tasks calling this script will fail. -The solution is to set a default value of false for this variable-. Presumably introduced by the continuous DA contribution.

Edit: In addition there is a reference to a path containing uptraj which is also DA specific, the block of code doing the check and setting the working directory should probably be guarded to only execute in DA configurations.

Bruce Ingleby, Cristina Lupu, Gabor Radnoti, Peter Lean, Tomas Wilhelmsson - dabi_CY46R1.20181221_-IFS-645-fsobs - BIT IDENTICAL

change date checks and scripts so that fsobs works at 46r1 (IFS-645)

fsobs doesn't work at 46r1. Several issues have been fixed at script level, but h3jq then fails in both J1 and J1back tasks in a date check. Advice from [~nat]:(

'The call to MOD_INI from SUARG will always abort for configuration 801 since the KUSTOP argument is called with a hard-coded value of -1. But even without the abort, the only thing that is done in MOD_INI for cofig 801 is to check if the start date minus forecast length happens to be in the previous century and if so abort.

I'd be tempted to remove this " 3. Set initial date for sensitivity calculations" section from MOD_INI and (maybe) move it to SURIP instead.' - section removed.

Various script changes and ODB merge changes were also needed and use of entryno (instead of vertco_-reference_1) in the merge was implemented.

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (CMAKE): `satrad.cmake`

Files modified (IFS): `cpedia.F90 fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 satsim.F90 hpos.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_-submodule.F90 mgrids_sladv_module.F90 control_vectors_comm_mod.F90 field_-definitions.F90 field_gfl_wrapper.F90 iogride_mod.F90 parfpos.F90 surface_-fields_mix.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 yom_grib_codes.F90 yomafn.F90 yomppc.F90 namafn.nam.h airepbe.F90 dribube.F90 paobbe.F90 pilotbe.F90 ptendcor.F90 synopbe.F90 tempbe.F90 interchan_obserr_cor.F90 aer_phy3.F90 aer_-src.F90 callpar.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 su0yoma.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 suorog.F90 supp.F90 susatsim.F90 updtim.F90 getmini.F90 savmini.F90 suinfce.F90 sujbwavwri.F90`

Files modified (ODB): `b2o_amend.F90 b2o_convert_grad.F90 b2o_convert_msg.F90 b2o_-decode.F90 get_varindex.F90 hdr.h b2o_internal.F90 varindex_module.F90`

Files modified (SATRAD): `mod_screen_1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F90`

Files modified (WAM): `cal_second_order_spec.F90 ctuw.F90 h_max.F90 inwgrib.F90 kurtosis.F90 mpcrtbl.F90 peak_ang.F90 wgrib2fdb.F90`

Cristina Lupu, Andrew Bennett, Andrew Dawson - stc_CY46R1_satimsim_space_view - BIT IDENTICAL

Revive simulated satellite imagery in space view (IFS-693)

This is to revive the satellite images in space view ("old way", activated by setting LSATIMSIM=on in prepIFS, option for RD experimentation). Satellite images in both the window and water vapour (WV) channels were simulated over each of the 5 geostationary satellite's disk (MET-7, MET-10, GOES-15, GOES-13 and Himawari-8). Brightness temperatures were calculated using the same radiative transfer algorithm (RTTOV) as in the operational data assimilation and using the relevant atmospheric model profiles - temperature (130),

specific humidity (133), ozone mass mixing ratio (203), cloud cover (248), specific cloud liquid water content (246), specific cloud ice water content (247), specific rain water content (75), specific snow water content (76) and the relevant surface parameters - skin temperature (235), 10m u (165) and v (166) wind components, 2m temperature (167) and 2m dewpoint temperature (168), volumetric soil water layer 1 (039), convective available potential energy(059).

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (IFS): `fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 parfpos.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 aer_phy3.F90 aer_src.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 suorog.F90 mod_ini.F90 updtim.F90 suinfce.F90 sujbwavwri.F90`

Files modified (SATRAD): `bufr_screen_reo3_superob.F90`

Files modified (WAM): `wgrib2fdb.F90`

Elias Holm, Sebastien Massart - dae_CY46R1_sujbwavwri_good_adtest - NON-METEOROLOGICAL

Updated sujbwavwri giving good adjoint test (IFS-742)

The adjoint test of the variational assimilation in CY46R1 was of lower quality than expected. Test showed this was related to the input wavelet B from the 46R1 EDA. There was extra code block in sujbwavwri for decomposition and multiplication together of the square root of B matrix, which we removed completely. This code block, formally an identity operator, is numerically is not identity and degrades the adjoint test. Fortunately, this is only needed for saving space when inverse B is also written out, so can be removed from current cycle.

Only sujbwavwri.F90 is changed.

Files modified (IFS): `compo_diurnal.F90 aer_dust.F90 parfpos.F90 varbc_to3.F90 yoeaersrc.F90 aer_phy3.F90 aer_src.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 uvradi.F90`

Files modified (SATRAD): `bufr_screen_reo3_superob.F90 gensatim.F90`

Atmosphere - Composition

- 3D aerosol climatology and possible improvements to aerosol optics/background AOD (IFS-267)
- Add GLOMAP aerosol scheme as option (IFS-401)
- Add capability to output “surface fluxes” from post processing (IFS-482)
- Atmospheric composition / CAMS contributions for 46r1 / aerosol resuspension scheme (IFS-467)
- Atmospheric composition / CAMS contributions for 46r1 / former 45R2 contribution with small scale devs (IFS-465)
- Atmospheric composition / CAMS contributions for 46r1 / new IFS-GLOMAP branch (IFS-464)
- Atmospheric composition / CAMS contributions for 46r1 / new sulphate conversion scheme (IFS-466)
- BFAS scripts fail when a pre-built IFS bundle is used (IFS-747)
- CAMS 46r1 bug fixes (IFS-732)
- CAMS chemistry script update (IFS-503)
- CAMS contribution for 46R1 : IFS-GLOMAP developments (IFS-607)
- CAMS contribution for 46R1 : new aerosol scavenging and smaller scale developments (IFS-606)
- Change of CAMS GHG emission files and clean up of GHG emission script (IFS-749)
- Chemistry bug fixes for 46r1 (IFS-611)
- Clean up of vdfmain for tracer fluxes (IFS-492)
- Introduce LGHG_ASSIM flag to choose whether CO2 and CH4 are in control vector and LGHG_RTTOV to be able to use CAMS CO2 in RTTOV (IFS-505)
- On-line dry deposition for chemistry (IFS-459)
- Optimise triggers for CAMS “cycling forecast” experiment (IFS-509)
- Output near-surface aerosol extinction/absorption at 0
- Output of chemistry fluxes (IFS-486)
- Read monochromatic aerosol optical properties from file rather than hard-coding them (IFS-446)
- Removal of orphaned composition routines (IFS-483)
- S5P passive monitoring in IFS (IFS-562)
- Sea salt emitted over freshwater lakes (IFS-246)
- Technical changes for new ozone products (IFS-603)
- Update of CB05 and BASCOECB05 chemistry by CAMS42 (IFS-468)
- Update of IFS-MOCAGE chemistry scheme (IFS-460)
- Visibility doesn’t see aerosol if 3D climatology used (IFS-728)
- aerosol lidar assimilation (IFS-397)
- chem_setup introduciotn and cleaning for outputing emissions (IFS-471)
- improve diurnal cycle for biomass burning emissions (IFS-491)

Zak Kipling - cxzk_CY45R1_no_lake_seasalt-IFS-246 - BIT IDENTICAL

Sea salt emitted over freshwater lakes (IFS-246)

As discovered by one of our users in CUS-2855, the aerosol module emit sea salt over *all* bodies of water, including freshwater lakes as well as over the sea.

This is clearly wrong and stems from the fact that the “land-sea mask” (LSM) field, which is used to determine where sea salt is emitted, is really more of a “land-water mask”, and must be interpreted together with the “lake cover” (CL) field in order to isolate ocean points only.

In the long run, something more sophisticated should perhaps be done, taking into account surface salinity.

Note: also affects historical versions in addition to those listed, including MACC, CAMS Interim and current CAMS reanalyses.

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 aer_phy2.F90 aer_src.F90 aer_ssalt.F90 aer_ssalt_grythe.F90 aer_ssalt_ms.F90 aerini_layer.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F9 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (IFSAUX): `abor1.intfb.h abor1.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV. ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9 GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV. LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h`

ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-

def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Alessio Bozzo - paab_CY45R1_3D_aer_clim - METEOROLOGICAL

3D aerosol climatology and possible improvements to aerosol opticsbackground AOD (IFS-267)

Full 3-dimensional aerosol climatology to replace the current 2-dimensional + simplified vertical description. Both derived from the same CAMS runs.

Test whether possible to reduce (potentially remove) the tropospheric background AOD - *tested and not feasible yet*

Update/revision of aerosol optical properties if necessary - *done, implemented. New file to be included in the IFS data files is /perm/rd/paab/TESTDATA_IFS/aerosol_ifs_rrtm_46R1.nc which is compatible with the CAMS branch IFS-370***

45R1 branch: paab_CY45R1_3D_aer_clim

climate run (compared against control with current 2D cams climatology): [file:///perm/rd/paab/climate/gpzq/index.html]

winter and summer forecast only:

/perm/rd/paab/iver/plots/45r1_3Daer_399_summer/index.html

/perm/rd/paab/iver/plots/45r1_3Daer_399_winter/index.html

summer analysis: gxc9

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 updrgas.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 radiation_ifs_rrtm.F90 radiation_interface.F90 radiation_setup.F90 surface_fields_mix.F90 yoeaerc.F90 yoerad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 naerad.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cloud_layer.F90 cloudsc.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aer_climatology3d.F90 su_aerp.F90 sucldp.F90 suecaec.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 modify_wv_continuum.F90 radact.F90 raddrv.F90 radiation_scheme.F90 radintg.F90 radlswr.F90 srtm_init.F90 suecrad.F90 surdi15.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV. ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9 GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV. LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h

ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90

gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90
radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-
gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-
ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-
optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-
mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-
optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-
save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-
spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90
radiation_tripleclouds_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Julie Letertre-Danczak, Angela Benedetti, Johannes Flemming, Rossana Dragani, Zak Kipling - stjl_CY45R1_lidar_aerosol_assimilation_for_45R2 - BIT IDENTICAL

aerosol lidar assimilation (IFS-397)

7 files have been modify to assimilate some lidar backscatter (attenuated or not) at different wavelengths (355, 532, 1064nm) from different instruments (ground-based, satellite). The extinction coefficient can also be used.

Files modified (IFS): call_sl.F90 cpedia.F90 postphy.F90 updclie.F90 ctxinitdb.F90

getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90
fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_-
grib_codes.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90
mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90
pre_thinner.F90 reo3sin.F90 thin_red_presort.F90 aer_lidsimad.F90 aer_lidsimop.F90
aer_lidsimtl.F90 departure_jo.F90 hinth.F90 hretr_conv.F90 obsop_composition.F90
radtr_ml.F90 diag_clouds.F90 ec_phys.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90
vdfexcustl.F90 radiation_scheme.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90
susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 supp.F90 dealsc2.F90
interp_gp.F90 aerlid_setup.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90

bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90

fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Zak Kipling, Samuel Remy - cxzk_CY45R1_GLOMAP_disr_norms - BIT IDENTICAL

Add GLOMAP aerosol scheme as option (IFS-401)

[No description]

Zak Kipling, Alessio Bozzo - cxzk_CY45R1_COMPO_mono_optics_only - BIT IDENTICAL

Read monochromatic aerosol optical properties from file rather than hard-coding them (IFS-446)

The old approach of hard-coding the monochromatic aerosol optical property look-up tables (used to calculate AOD etc) is difficult to maintain.

A cleaner solution is to read them in from the NetCDF files alongside the wave-band properties used in ecRad.

This is a spin-off from IFS-267 via the branch paab_CY45R1_mono_aer_optics for the radiation interface work, with subsequent configuration clean-up on the aerosol side.

The relevant changes have been separated from those in paab_CY45R1_3D_aer_clim (on top of which the original branch was built) onto a new branch in order that they are bit-identical from a meteorological point of view.

Files modified (ENKF): obs_constants.F90

Files modified (IFS): call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 radiation_setup.F90 sats_-mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_-setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_-phys.F90 ghg_main.F90 postphy_layer.F90 su_aerop.F90 su_aerp.F90 su_aerw.F90 suphec.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_-

scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_-
jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90
suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90
interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90
jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (IFSAUX): abor1.intfb.h abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90

cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90

b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-gmi_swaths.F90

Files modified (RADIATION): radiation_aerosol_optics_data.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Johannes Flemming, Joaquim Arteta , Virginie Marecal - naj_CY45R1_COMPO_OLDD - BIT IDENTICAL

On-line dry deposition for chemistry (IFS-459)

Option to calculate on-line dry deposition velocities for chemical species based on Wesely scheme as outline in Seinfeld and Pandis (1998).

The code has been originally developed by meteo-france for the MOCAGE model. It has been adapted to the IFS. Major changes are:

- use of IFS land use and vegetation classes in stead of Arpege classes
- use of stomatal resistance calculated by IFS surface scheme
- use of IFS exchange coefficient for lowest model level as (reverse) aerodynamic resistance

New varaibles in namelist NAMCHEM

- *LCHEM_DVOL* to switched on on-line dry deposition for chemistry (default LCHEM_DVOL=false)

New varaibles in config.h only

- *LCHEM_DIAF* (default=true) to trigger output of dry deposition fluxes, wet deposition fluxes and dry deposition velocity using ML GFL EXTRA fields (see chem_setup)

Files modified (ENKF): obs_constants.F90

Files modified (IFS): call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 drydep_par.F90 field_definitions.F90 field_-gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90

yomchem.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90
mwave_setup.F90 namchem.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90
level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_-
jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 chem_initflux.F90
chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90
cumastrn.F90 ddr_laminar_res.F90 ddr_surf_res1.F90 ddr_we_season.F90 depvel_-
wsl.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90
vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 vdfouter.F90 wvxf2gb.F90 radiation_-
scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_-
jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90
suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90
interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90
jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (IFSAUX): abor1.intfb.h abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90

bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90

jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h
update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90
b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-
gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (SURF): surfexcdriver.F90 surfexcdriver.h surfexcdriver_ctl_mod.F90
vexcs_mod.F90 vsurf_mod.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Johannes Flemming, Joaquim Arteta , Vincent Huijnen, Virginie Marecal - naj_CY45R1_-mocage_for_46r1 - BIT IDENTICAL

Update of IFS-MOCAGE chemistry scheme (IFS-460)

Update of the MOCAGE chemistry scheme in IFS developed by CAMS42.

The update consists of:

- Upgrade of photolysis rates, and introduction of PAN photolysis (see also D42.2.3.2)
- Upgrade of reaction rates to follow IUPAC (see also D42.2.3.2)
- Option to run with NOy family advection supported
- representation of stratospheric H2O in IFS(MOCAGE) treated as chemical tracer

The mocage chemistry schemes uses table_mocage_racmobusv14.1.txt.

The IFS-MOCAGE can not be run together with the aerosol scheme because of an overlap of grib parameters in table mocage_racmobusv14.1.txt. and aerosol surface fields (see aero_setup)

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 acch_csrv.F90
chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90 chem_noyadv.F90
chem_tm5.F90 mocage_chem_ini.F90 mocage_elem_racmobus.F90 mocage_equi_racmobus.F90
mocage_hana.F90 mocage_hden.F90 mocage_hete.F90 mocage_hsed.F90 mocage_krat_-
racmobus.F90 mocage_nebj.F90 mocage_phot.F90 mocage_sola.F90 mocage_soufreaq.F90
tm5_calrates.F90 tm5_macc_aerosol.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_-
obsdb.F90 cnt3_glo.F90 csekf2.F90 gp_model.F90 gridfpos.F90 hpos.F90 iofpos.F90

subfpos.F90 wrmlfp.F90 wrmlfp_io_serv.F90 field_definitions.F90 field_gfl_-
wrapper.F90 fields_mod.F90 gfl_subs_mod.F90 grib_utils_mod.F90 iogride_mod.F90
iostream_mix.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90 parfpos.F90
radiation_setup.F90 surface_fields_mix.F90 varbc_to3.F90 yoeaeratm.F90 yoeaermap.F90
yoeaerop.F90 yoeaersnk.F90 yoeaersrc.F90 yoephy.F90 yom_grib_codes.F90 yom_-
ygfl.F90 yomafn.F90 yomcompo.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_-
emis.F90 mwave_setup.F90 naeaer.nam.h naephy.nam.h naevol.nam.h namcompo.nam.h
namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90
thin_red_presort.F90 fields_io_mod.F90 aer_lidsimad.F90 aer_lidsimop.F90 aer_-
lidsimtl.F90 aod_ad.F90 aod_dualcv_ad.F90 aod_dualcv_op.F90 aod_dualcv_tl.F90
aod_op.F90 aod_tl.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 rao_ad.F90 rao_-
op.F90 rao_tl.F90 aer_bdgtmss.F90 aer_climg.F90 aer_clist.F90 aer_dmso.F90
aer_drydep.F90 aer_lidsim.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_-
phy3_layer.F90 aer_rad.F90 aer_rrtm.F90 aer_scavbc.F90 aer_scavin.F90 aer_-
sedimnt.F90 aer_so2so4.F90 aer_src.F90 aer_tau.F90 aerc_scav.F90 aerini_layer.F90
callparad.F90 callpartl.F90 chem_initflux.F90 chem_main_layer.F90 climaer_-
layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90
ec_phys.F90 ghg_main.F90 o3chem.F90 postphy_layer.F90 su_aerop.F90 su_aerp.F90
su_aerw.F90 suphec.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_-
scheme.F90 radintg.F90 suecrad.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_-
layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0phy.F90 su0yomb.F90
su_surf_flds.F90 suafn.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90
sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 bgvecs.F90
chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 rdfpinc.F90
sujbwavelet_stdevs.F90 xformev.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h

LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
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cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
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mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
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coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90

obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90 gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (RADIATION): radiation_config.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Samuel Remy, Zak Kipling - disr_CY45R1_GLOMAP - BIT IDENTICAL

Atmospheric composition CAMS contributions for 46r1 new IFS-GLOMAP branch (IFS-464)

This branch has been built on top of cxzk_CY45R1_GLOMAP and includes several new features of IFS-GLOMAP:

- adjusted scavenging and the convective fraction of the grid cell used in scavenging,
- removal of negative values using the AER_NEGAT routine (similarly to what is done in IFS-AER),
- added SO2 dry deposition (uing SUM0 dry deposition velocities),
- gives the possibility to by pass the nucleation process: the converted SO2 is added directly as SO4 in the Accumulation mode (same for SOA).
- debugged the use of injection heights for biomass burning aerosols,
- adjusted the emissions of the new dust scheme recently implemented in IFS-GLOMAP,
- use of new sand/clay fraction files for the dust scheme,
- added a cap to SOA “emissions” (similar to the cap now tested in the 45R1 e-suite),
- added reevaporation process in scavenging,
- small scale debugging

A new switch *LAERNUCL* in *NAMCOMPO* has been added, to choose between using GLOMAP nucleation (true) or to bypass it by directly updating mass and number of the accumulation mode, for sulphate and SOA.

A new switch *NAER_BLNUCL* in *NAEAER* has been added to choose between 6 different nucleation schemes in the boundary layer, currently not used.

The same dust input files are used as in the operational scheme (dust and clay soil fraction)

Files modified (CMAKE): `intfb.cmake`

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_tm5.F90 tm5_macc_aerosol.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 aer_dust.F90 aer_seasalt.F90 ukca_aero_step.F90 ukca_aero_step_ifs.F90 ukca_ageing.F90 ukca_binapara77.F90 ukca_calc_coag_kernel.F90 ukca_calc_drydiam.F90 ukca_calcminmaxgc.F90 ukca_calcminmaxndmdt.F90 ukca_calcnucrate.F90 ukca_check_md_nd.F90 ukca_chem_ifs.F90 ukca_cloudproc.F90 ukca_coag_coff_v.F90 ukca_coagwithnucl.F90 ukca_cond_coff_v.F90 ukca_conden.F90 ukca_dcoff_par_av_k.F90 ukca_ddepaer.F90 ukca_impc_scav.F90 ukca_ingridg.F90 ukca_mode_ems.F90 ukca_mode_ems_ifs.F90 ukca_no3nh4.F90 ukca_offl_ox.F90 ukca_prim_car.F90 ukca_prim_du.F90 ukca_prim_du2.F90 ukca_prim_soa.F90 ukca_prim_ss.F90 ukca_prim_su.F90 ukca_radaer_compute_aod.F90 ukca_radaer_ifs.F90 ukca_radaer_init.F90 ukca_radaer_lut_in.F90 ukca_radaer_read_luts.F90 ukca_radaer_read_precalc.F90 ukca_radaer_set_thermodynamic.F90 ukca_rainout.F90 ukca_remode.F90 ukca_sedim.F90 ukca_sedimnt.F90 ukca_so2so4.F90 ukca_solvecoagnucl_v.F90 ukca_vapour.F90 ukca_vgrav.F90 ukca_vgrav_av_k.F90 ukca_volume_mode.F90 ukca_water_content_v.F90 ukca_wetox.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 parfpos.F90 surface_fields_mix.F90 ukca_constants.F90 ukca_mode_setup.F90 ukca_radaer_comptype.F90 ukca_radaer_lut_mod.F90 ukca_radaer_modetype.F90 ukca_radaer_precalc_mod.F90 ukca_radaer_struct_mod.F90 ukca_radaer_tlut_mod.F90 ukca_setup_indices.F90 yoeaeratm.F90 yoeaermap.F90 yoeaersrc.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcompo.F90 yommwave.F90 yomphyder.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 naeaer.nam.h namcompo.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 aer_bdgtmss.F90 aer_diagglomap.F90 aer_drydep.F90 aer_lidsim.F90 aer_no3nh4.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_rad.F90 aer_rrtm.F90 aer_src.F90 aer_tau.F90 aerini_layer.F90 aero_init.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 local_arrays_fin.F90 local_arrays_ini.F90 postphy_layer.F90 su_aerp.F90 su_aerw.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c`

```
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
```

dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Samuel Remy, Zak Kipling - disr_CY45R1_CAMS_for45R2_new_testscav - BIT IDENTICAL

Atmospheric composition CAMS contributions for 46r1 former 45R2 contribution with small scale devs (IFS-465)

This branch includes the two main contributions for 45R2:

- new dust scheme (https://software.ecmwf.int/issues/browse/IFS-346)
- new SOA species (https://software.ecmwf.int/issues/browse/IFS-347)

That were included in Zak's merged branch for 45R2. On top of this, some small scale developments were added:

- modification of the distribution of the dust tendency from heterogeneous nitrate formation,
- Use of a newer, referenced and higher resolution sand/silt/clay fraction file in the new dust scheme,
- Tuning of regional dust emission parameters,
- Modification of the contribution of super coarse dust bin in PM10,
- Adjustment of SO2 to SO4 conversion: the scale factor from temperature cannot be lower than 0.3 (was 0.1),
- Online dry deposition: velocities are reduced by a factor of 2.5 over snowy and icy surface (with a max value of 0.0003 m/s),
- Online dry deposition: use of more realistic size distribution for sulphate, sea-salt, OM,
- Scavenging efficiency set to 0.06 for all species if T< 238.5 K,
- Scavenging efficiency of fine nitrate and ammonium set to 0.8 (was 0.4), coarse nitrate set to 0.9 (was 0.4), following [https://www.atmos-chem-phys.net/14/6967/2014/acp-14-6967-2014.pd|https://www.atmos-chem-phys.net/14/6967/2014/acp-14-6967-2014.pdf],
- Added a cap and a diurnal cycle on SOA emissions,
- SOA emissions released in the first 50m instead of as surface fluxes,
- With the new SOA species, SOA emissions are reduced by a 40%. Anthropogenic SOA emissions are reduced from ˜ 140 TG/Year to 84 Tg/Yr (not counting the cap).

External file: */home/rd/disr/sand_new.grib* and */home/rd/disr/clay_new.grib* in ccb, sand and clay soil fractions. They are used in the same way as the surfex files that were originally used in the new dust scheme and were added to operational data files in the 45R2 merge.

A new switch *LAERSOAEMIS_FLUX* in the NAEAER namelist (SOA emissions as fluxes or tendencies) has been added, it would be nice to have it also in prepIFS.

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 acch_csrv.F90 bascoe_chem_ini.F90 bascoe_hetconst.F90 bascoe_kpp_Rates.F90 bascoetm5_chem_ini.F90 bascoetm5_noymass.F90 chem_aerscav.F90 chem_bascoe.F90 chem_bascoetm5.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 mocage_chem_ini.F90 mocage_elem_racmobus.F90 mocage_equi_racmobus.F90 mocage_hana.F90 mocage_hden.F90 mocage_hete.F90 mocage_hsed.F90 mocage_krat_racmobus.F90 mocage_nebj.F90 mocage_phot.F90 mocage_sola.F90 mocage_soufreaq.F90 tm5_calrates.F90 tm5_chem_ini.F90 tm5_do_ebi.F90 tm5_do_ebi_tc02b.F90 tm5_kpp_Fun.F90 tm5_kpp_Jacobian.F90 tm5_kpp_LinearAlgebra.F90`

tm5_kpp_Rates.F90 tm5_kpp_initialize.F90 tm5_kpp_update_cifs_conc.F90 tm5_-
macc_aerosol.F90 tm5_photo_flux.F90 tm5_photorates_tropo.F90 tm5_rbud.F90 tm5_-
v0_kpp_update_cifs_conc.F90 tm5_wetchem.F90 tm5_wetchem_point.F90 updclie.F90
ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 gp_model.F90
gridfpos.F90 hpos.F90 iofpos.F90 subfpos.F90 wrmlfp.F90 wrmlfp_io_serv.F90
bascoe_module.F90 bascoetm5_module.F90 field_definitions.F90 field_gfl_wrapper.F90
fields_mod.F90 gfl_subs_mod.F90 grib_utils_mod.F90 iogride_mod.F90 iostream_-
mix.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90 parfpos.F90 radiation_-
setup.F90 surface_fields_mix.F90 tm5_chem_module.F90 tm5_kpp_JacobianSP.F90
tm5_kpp_Parameters.F90 tm5_photolysis_new.F90 varbc_to3.F90 yoeaeratm.F90 yoeaermap.F
yoeaerop.F90 yoeaersnk.F90 yoeaersrc.F90 yoephy.F90 yom_grib_codes.F90 yom_-
ygfl.F90 yomafn.F90 yomchem.F90 yomcompo.F90 yommwave.F90 yomppc.F90 yomsekf.F90
mwave_emis.F90 mwave_setup.F90 naeaer.nam.h naephy.nam.h naevol.nam.h namchem.nam.h
namcompo.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90
pre_thinner.F90 thin_red_presort.F90 fields_io_mod.F90 gp_model_oops.F90 aer_-
lidsimad.F90 aer_lidsimop.F90 aer_lidsimtl.F90 aod_ad.F90 aod_dualcv_ad.F90
aod_dualcv_op.F90 aod_dualcv_tl.F90 aod_op.F90 aod_tl.F90 departure_jo.F90
hinth.F90 radtr_ml.F90 rao_ad.F90 rao_op.F90 rao_tl.F90 aer_bdgtmss.F90 aer_-
climg.F90 aer_clist.F90 aer_dmso.F90 aer_drydep.F90 aer_drydepvel.F90 aer_-
lidsim.F90 aer_no3nh4.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_-
layer.F90 aer_rad.F90 aer_rrtm.F90 aer_scavbc.F90 aer_scavin.F90 aer_sedimnt.F90
aer_so2so4.F90 aer_src.F90 aer_tau.F90 aerc_scav.F90 aerini_layer.F90 callpar.F90
callparad.F90 callpartl.F90 chem_initflux.F90 chem_main_layer.F90 climaer_-
layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90
ec_phys.F90 ghg_main.F90 o3chem.F90 postphy_layer.F90 su_aerop.F90 su_aerp.F90
su_aerw.F90 suphec.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_-
scheme.F90 radintg.F90 suecrad.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_-
layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0phy.F90 su0yomb.F90
su_surf_flds.F90 suafn.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90
sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 bgvecs.F90
chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 rdfpinc.F90
sujbwavelet_stdevs.F90 xformev.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
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compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc

ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
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mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
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domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-

inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90 obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90 obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90 obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90 gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (RADIATION): radiation_config.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Samuel Remy, Zak Kipling - disr_CY45R1_CY45R1_CAMS_for45R2_new_sulphate - BIT IDENTICAL

Atmospheric composition CAMS contributions for 46r1 new sulphate conversion scheme (IFS-466)

This branch implements a new sulphate conversion scheme, that uses as input 3D climatologies of OH, H2O2 and O3 from CAMSiRA and CAMSiRA control run. The sulphate conversion scheme can be selected via the integer *NSSCHEME* in the *NAEAER* namelist (it would be good to propose this choice in the prepIF overlay as well). NSSCHEME=1 is the operational scheme, NSSCHEME=2 is the new scheme.

This branch has been built on top of disr_CY45R1_CAMS_for45R2_new_testscav

The 3D climatologies are currently in /home/rd/disr on ccb: file *OH_clim.grb, O3_clim.grb, H2O2_clim.grb*

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 acch_csrv.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90 chem_tm5.F90 mocage_chem_ini.F90 mocage_elem_racmobus.F90 mocage_equi_racmobus.F90 mocage_hana.F90 mocage_hden.F90 mocage_hete.F90 mocage_hsed.F90 mocage_krat_racmobus.F90 mocage_nebj.F90 mocage_phot.F90 mocage_sola.F90 mocage_soufreaq.F90 tm5_calrates.F90 tm5_macc_aerosol.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 gridfpos.F90 hpos.F90 iofpos.F90 subfpos.F90 wrmlfp.F90 wrmlfp_io_serv.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 gfl_subs_mod.F90 grib_utils_mod.F90 iogride_mod.F90 iostream_mix.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90 parfpos.F90 radiation_setup.F90 surface_fields_mix.F90 type_gflflds.F90 varbc_to3.F90 yoeaeratm.F90 yoeaermap.F90 yoeaerop.F9 yoeaersnk.F90 yoeaersrc.F90 yoephy.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcompo.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 naeaer.nam.h naephy.nam.h naevol.nam.h namcompo.nam.h namgfl.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 fields_io_mod.F90 aer_lidsimad.F90 aer_lidsimop.F90 aer_lidsimtl.F90 aod_ad.F90 aod_dualcv_ad.F90 aod_dualcv_op.F90 aod_dualcv_tl.F90 aod_op.F90 aod_tl.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 rao_ad.F90 rao_op.F90 rao_tl.F90 aer_bdgtmss.F90 aer_climg.F90 aer_clist.F90 aer_dmso.F90 aer_drydep.F90 aer_drydepvel.F90 aer_lidsim.F90 aer_no3nh4.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_rad.F90 aer_rrtm.F90 aer_scavbc.F90 aer_scavin.F90 aer_sedimnt.F90 aer_so2so4.F90 aer_so2so4_v2.F90 aer_src.F90 aer_tau.F90 aerc_scav.F90 aerini_layer.F90 callparad.F90 callpartl.F90 chem_initflux.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 o3chem.F90 postphy_layer.F90 su_aerop.F90 su_aerp.F90 su_aerw.F90 suphec.F90 vdfexcusad.F90 vdfexcustl.F vdfmain.F90 radiation_scheme.F90 radintg.F90 suecrad.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0phy.F90 su0yomb.F90 su_surf_flds.F90 suafn.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 bgvecs.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F9 pregprh.F90 rdfpinc.F90 sujbwavelet_stdevs.F90 xformev.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova

TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
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AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
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domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (RADIATION): radiation_config.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Samuel Remy, Zak Kipling - disr_CY45R1_CAMS_for45R2_new_resuspension - BIT IDENTICAL

Atmospheric composition CAMS contributions for 46r1 aerosol resuspension scheme (IFS-467)

This branch implements a new aerosol resuspension scheme over urban areas, switched on by the *LAERRESUSPENSION* logical in the *NAMCOMPO* namelist (it would be good to add this new switch in the prepIFS overlay) . The flux of resuspended aerosols depend on the dry deposition and the sedimentation fluxes as well as on surface friction velocity, urban fraction (provided by an external file), relative humidity and critically the particle size. The resuspended aerosols are currently only super coarse dust and sea-salt particles, the other

aerosols are too small to provide meanginful resuspension fluxes.

This branch has been built on top of disr_CY45R1_CAMS_for45R2_new_testscav.

The urban fraction file is on ccb, */home/rd/disr/urban.grb*. It uses the grib code 216122

The impact on skill scores of AOD and PM10 forecasts is null. For some very large dust events, the impact can be significant though: Beijing PM10 was simulated 25 microg/m3 higher with the resuspension scheme during the 3-4 May 2017 dust storm. The impact increases with horizontal resolution.

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 acch_csrv.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90 chem_tm5.F90 mocage_chem_ini.F90 mocage_elem_racmobus.F90 mocage_equi_racmobus.F90 mocage_hana.F90 mocage_hden.F90 mocage_hete.F90 mocage_hsed.F90 mocage_krat_racmobus.F90 mocage_nebj.F90 mocage_phot.F90 mocage_sola.F90 mocage_soufreaq.F90 tm5_calrates.F90 tm5_macc_aerosol.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 gridfpos.F90 hpos.F90 iofpos.F90 subfpos.F90 wrmlfp.F90 wrmlfp_io_serv.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 gfl_subs_mod.F90 grib_utils_mod.F90 iogride_mod.F90 iostream_mix.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90 parfpos.F90 radiation_setup.F90 surface_fields_mix.F90 varbc_to3.F90 yoeaeratm.F90 yoeaermap.F90 yoeaerop.F90 yoeaersnk.F90 yoeaersrc.F90 yoephy.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcompo.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 naeaer.nam.h naephy.nam.h naevol.nam.h namcompo.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 fields_io_mod.F90 aer_lidsimad.F90 aer_lidsimop.F90 aer_lidsimtl.F90 aod_ad.F90 aod_dualcv_ad.F90 aod_dualcv_op.F90 aod_dualcv_tl.F90 aod_op.F90 aod_tl.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 rao_ad.F90 rao_op.F90 rao_tl.F90 aer_bdgtmss.F90 aer_climg.F90 aer_clist.F90 aer_dmso.F90 aer_drydep.F90 aer_drydepvel.F90 aer_lidsim.F90 aer_no3nh4.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_rad.F90 aer_resuspension.F90 aer_rrtm.F90 aer_scavbc.F90 aer_scavin.F90 aer_sedimnt.F90 aer_so2so4.F90 aer_src.F90 aer_tau.F90 aerc_scav.F90 aerini_layer.F90 callpar.F90 callparad.F90 callpartl.F90 chem_initflux.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 o3chem.F90 postphy_layer.F90 su_aerop.F90 su_aerp.F90 su_aerw.F90 suphec.F90 vdfexcusad.F90 vdfexcustl.F vdfmain.F90 radiation_scheme.F90 radintg.F90 suecrad.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0phy.F90 su0yomb.F90 su_surf_flds.F90 suafn.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 bgvecs.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 rdfpinc.F90 sujbwavelet_stdevs.F90 xformev.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F`

```
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
```

lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90 mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90 jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90 obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90 obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90 obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90 obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90 gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (RADIATION): radiation_config.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Johannes Flemming, Vincent Huijnen - naj_CY45R1_CAMS42_for_46R1_ver2.2 - BIT IDENTICAL

Update of CB05 and BASCOECB05 chemistry by CAMS42 (IFS-468)

Improvements of the chemistry scheme CB05 and BASCOECB05 prepared by CAMS 42 (Vincent Huijnen , KNMI)

- Upgrade of reaction rates to follow latest recommendations by JPL/IUPAC, both troposphere and stratosphere
- Inclusion of option to use an extended isoprene degradation scheme (LCHEM_REVCHEM)
- Improved model stability for stratospheric chemistry simulations
- Family advection for the NOY family
- usage of CH4 fluxes for chemistry CH4 is specified in tablefile
- Various smaller revisions and bug fixes

New variables for namelist NAMCHEM:

- *KCHEM_NOXADV*=0/1/2 (default 0), 0: no family advection, 1: NOX family advection, 2: NOY family advection, replaces LCHEM_NOXA
- *LCHEM_REVCHEM* (default=false) to switch on improved isoprene degradation for CB05

The chemistry configuration file is table_tm5ver16.txt. (CHEM_VER=ver16)

For *LCHEM_REVCHEM*=true it is table_tm5ver17.txt which has tow additional species (CHEM_VER=ver17)

KCHEM_NOXADV and *LCHEM_REVCHEM* should be added to prepIFS.

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 acch_csrv.F90 bascoe_chem_ini.F90 bascoe_hetconst.F90 bascoe_kpp_Rates.F90 bascoetm5_chem_ini.F90 bascoetm5_noymass.F90 chem_bascoe.F90 chem_bascoetm5.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 mocage_chem_ini.F90 mocage_elem_racmobus.F90 mocage_equi_racmobus.F90 mocage_hana.F90 mocage_hden.F90 mocage_hete.F90 mocage_hsed.F90 mocage_krat_racmobus.F90 mocage_nebj.F90 mocage_phot.F90 mocage_sola.F90 mocage_soufreaq.F90 tm5_calrates.F90 tm5_chem_ini.F90 tm5_do_ebi.F90 tm5_do_ebi_tc02b.F90 tm5_kpp_Fun.F90 tm5_kpp_Jacobian.F90 tm5_kpp_LinearAlgebra.F90 tm5_kpp_Rates.F90 tm5_kpp_initialize.F90 tm5_kpp_update_cifs_conc.F90 tm5_macc_aerosol.F90 tm5_photo_flux.F90 tm5_photorates_tropo.F90 tm5_rbud.F90 tm5_v0_kpp_update_cifs_conc.F90 tm5_wetchem.F90 tm5_wetchem_point.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 gp_model.F90 grib_code_message.F90 gridfpos.F90 hpos.F90 iofpos.F90 subfpos.F90 sufpgrib.F90 wrmlfp.F90 wrmlfp_io_serv.F90 io_serv_writefld_ec.F90 bascoe_module.F90 bascoetm5_module.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 gfl_subs_mod.F90 grib_utils_mod.F90 iogride_mod.F90 iostream_`

mix.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90 parfpos.F90 radiation_-
setup.F90 sats_mix.F90 surface_fields_mix.F90 tm5_chem_module.F90 tm5_kpp_-
JacobianSP.F90 tm5_kpp_Parameters.F90 tm5_photolysis_new.F90 varbc_rad.F90
varbc_to3.F90 yoeaeratm.F90 yoeaermap.F90 yoeaerop.F90 yoeaersnk.F90 yoeaersrc.F90
yoephy.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomchem.F90 yomcompo.F90
yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90
naeaer.nam.h naephy.nam.h naevol.nam.h namchem.nam.h namcompo.nam.h namsekf.nam.h
black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90
thin_red_presort.F90 fields_io_mod.F90 gp_model_oops.F90 aer_lidsimad.F90 aer_-
lidsimop.F90 aer_lidsimtl.F90 aod_ad.F90 aod_dualcv_ad.F90 aod_dualcv_op.F90
aod_dualcv_tl.F90 aod_op.F90 aod_tl.F90 departure_jo.F90 hinth.F90 hretr_-
rad.F90 rad1cemis.F90 radtr_ml.F90 rao_ad.F90 rao_op.F90 rao_tl.F90 aer_bdgtmss.F90
aer_climg.F90 aer_clist.F90 aer_dmso.F90 aer_drydep.F90 aer_lidsim.F90 aer_-
phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_rad.F90 aer_rrtm.F90
aer_scavbc.F90 aer_scavin.F90 aer_sedimnt.F90 aer_so2so4.F90 aer_src.F90 aer_-
tau.F90 aerc_scav.F90 aerini_layer.F90 callparad.F90 callpartl.F90 chem_initflux.F90
chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90
cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 o3chem.F90 postphy_-
layer.F90 su_aerop.F90 su_aerp.F90 su_aerw.F90 suphec.F90 vdfexcusad.F90 vdfexcustl.F
vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 radintg.F90 suecrad.F90 swniad.F90
swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90
susekf.F90 su0phy.F90 su0yomb.F90 su_surf_flds.F90 suafn.F90 suafn1.F90 suafn2.F90
suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90
dealsc2.F90 interp_gp.F90 updtim.F90 bgvecs.F90 chavarin.F90 chavarinad.F90
getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 rdfpinc.F90 sujbwavelet_-
stdevs.F90 xformev.F90

Files modified (IFSAUX): abor1.intfb.h abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9

GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-

tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90 obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90 obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90 gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-gmi_swaths.F90

Files modified (RADIATION): radiation_config.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Jerome Barre, Johannes Flemming, Zak Kipling - [No branch] - BIT IDENTICAL

chem_setup introduciotn and cleaning for outputing emissions (IFS-471)

Introducution of new variables in the script for emission management:

grib_nosfc, gribsfc, isemis,

removed confusion with nchemsfc: this should not be called nchemsfc but nchemtc...

chem_sfc_nam="" , it is a reset at the end of the script this should be removed if we want to have something happening there

[No branch]

Jerome Barre, Johannes Flemming, Zak Kipling - cxjb_CY45R1_COMPO_emis - BIT IDENTICAL

Add capability to output "surface fluxes" from post processing (IFS-482)

In ifs-source/cxjb_CY45R1_COMPO_emis/ifs changes in:

fullpos/hpos.F90

module/parfpos.F90

module/yomafn.F90

setup/suafn1.F90

setup/suafn2.F90

setup/suafn3.F90

to have the loaded emission fields in the post-processing. This is important to have to check whether the perturbed emission are actually inputed correctly and in the future to postprocess updated/incremented emission fields form inversion.

Files modified (IFS): `hpos.F90 parfpos.F90 yomafn.F90 namafn.nam.h su0yomb.F90 suafn1.F90 suafn2.F90 suafn3.F90 sujbwavgen.F90`

Zak Kipling - cxzk_CY45R1_COMPO_prune - BIT IDENTICAL

Removal of orphaned composition routines (IFS-483)

The following composition-related routines are not used or called from anywhere else in the code (which compiles fine without these files) and should be removed.

A few other routines are not called, but have been identified as still being useful so are not on this list.

The source files to be removed are:

ifs/chem/bascoe_wetdep.F90 ifs/chem/bascoe_zenith_fct.F90

ifs/module/yo_aero_m7.F90 ifs/phys_ec/m7*.F90 ifs/phys_ec/su_aerm7.F90 -- unused port of the M7 aerosol microphysics scheme (current efforts toward size-resolved aerosol are focussed on GLOMAP instead)

ifs/module/yo_aero_trac.F90 ifs/phys_ec/aer_radon.F90 ifs/phys_ec/rndecay.F90 -- unused simple tracer schemes, duplicating functionality we have elsewhere

ifs/phys_ec/aer_phy1.F90 ifs/phys_ec/aer_clim.F90 ifs/phys_ec/aer_climg.F90 ifs/phys_ec/aer_climz.F90 ifs/phys_ec/aer_clist.F90 -- unused simple hard-coded aerosol climatology mechanism

ifs/phys_ec/aer_drydep_ad.F90 ifs/phys_ec/aer_drydep_tl.F90 ifs/phys_ec/aer_sedim.F90 -- unused empty routines

ifs/phys_ec/aer_sdust.F90 -- unused simple dust emission scheme

ifs/phys_ec/aer_tau.F90 ifs/phys_ec/aer_tau2mixr.F90 -- unused code for AOD calculations (old version of what's now in AER_BDGTMSS?)

ifs/phys_ec/aer_unit_conv.F90 -- unused mixing ratio <-> concentration conversion code

ifs/pp_obs/aerod_ad.F90 ifs/pp_obs/aerod_op.F90 ifs/pp_obs/aerod_tl.F90 -- unused very-simple AOD calculation code (the one we actually use is AOD_{OP,TL,AD})

ifs/pp_obs/ppch4.F90 -- unused methane post-processing code

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 bascoe_wetdep.F90 bascoe_zenith_fct.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yo_aero_m7.F90 yo_aero_trac.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 aer_clim.F90 aer_climg.F90 aer_climz.F90 aer_clist.F90 aer_drydep_ad.F90 aer_drydep_tl.F90 aer_phy1.F90 aer_radon.F90 aer_sdust.F90 aer_sedim.F90 aer_tau.F90 aer_tau2mixr.F90 aer_unit_conv.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 m7.F90 m7_aero_prop.F90 m7_averageproperties.F90 m7_coaset.F90 m7_coat.F90 m7_concoag.F90 m7_cumnor.F90 m7_dconc.F90 m7_delcoa.F90 m7_dgas.F90 m7_dnum.F90 m7_drydep.F90 m7_emi.F90 m7_emi_car.F90 m7_emi_dms.F90 m7_emi_du.F90 m7_emi_so2.F90 m7_emi_ss_lsce.F90 m7_emi_ss_mon.F90 m7_equil.F90 m7_equimix.F90 m7_equiz.F90 m7_interface.F90 m7_logtail.F90 m7_negat.F90 m7_nuck.F90 m7_nucl_ku.F90 m7_nucl_ve.F90 m7_sedimentation.F90 m7_wetdep.F90 postphy_layer.F90 rndecay.F90 su_aerm7.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 aerod_ad.F90 aerod_op.F90 aerod_tl.F90 ppch4.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake

compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-

vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Johannes Flemming, Jerome Barre - naj_CY45R1_chemistry_flux_output_2 - BIT IDENTICAL

Output of chemistry fluxes (IFS-486)

Introduce output option for the total flux (as applied in the VDFDIFC) for the array of chemical species.

The purpose of the options is to get output of the actual fluxes, i.e. emissions including the on-line modifications and the dry deposition flux

The output will enable:

- archiving of the actual chemistry fluxes
- output of the fluxes in trajectory runs, which can be read in by TL and AD simulation (more technical changes are required to read in these fluxes)
- changing of fluxes required for emissions parameter estimation as part of DA

Writing of the fluxes is switched on by setting IRGBFLXO to a valid grib number in chem_setup (default is -9999). The variable LCHEM_FLXO (to be included in prepIFS, default=false) controls if IRGBFLXO (deafult=-9999) is set in chem_setup at all.

It might be useful to do later:

- option to output the emissions only (and not to include the dry deposition flux).
- option for accumulated fluxes rather than instantaneous fluxes.

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 gfl_subs_mod.F90 grib_utils_mod.F90 iogride_mod.F90 iostream_-mix.F90 parfpos.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_-grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namafn.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_-red_presort.F90 co2slicing.F90 co2slicing_ml.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 chem_initflux.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_-clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (IFSAUX): `abor1.intfb.h abor1.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake`

compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-

tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h
update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90
b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-
gmi_swaths.F90

Files modified (SATRAD): getcparam.h mod_cparam.F90 mwave_const.F90 mwave_get_rtcoeff.F90
mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 gensatim.F90
co2cld.F90 getcparam.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_-
ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_-
ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Johannes Flemming - naj_CY45R1_DCBB_update - BIT IDENTICAL

improve diurnal cycle for biomass burning emissions (IFS-491)

- update function to describe diurnal cycle for biomass burning emission (LCOMPO_DCBB=true) to the function used in GFAS (Kaiser et al. 2009, TM 596) ** "GFAS function" emits most at 15 local time
- restructure COMPO_DIURNAL.F90 to have options (KTYPE) for three functions
- apply diurnal profile also to CO2 and CH4 biomass burning emissions (LCOMPO_DCBB=true) in gems_init.F90
- update calls to COMPO_DIURNAL

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 compo_diurnal.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 co2slicing.F90 co2slicing_ml.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 aer_drydep.F90 aer_so2so4.F90 aer_src.F90 callparad.F90 callpartl.F90 chem_initflux.F90 chem_main_layer.F90 chemini_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 gems_init.F90 ghg_main.F90 local_arrays_ini.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (IFSAUX): `abor1.intfb.h abor1.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance`

TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
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ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
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bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
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cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
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dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
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Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): getcparam.h mod_cparam.F90 mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 gensatim.F90 co2cld.F90 getcparam.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Anna Agusti-Panareda, Johannes Flemming, Zak Kipling - paf_CY45R1_compo_flux_update - BIT IDENTICAL

Clean up of vdfmain for tracer fluxes (IFS-492)

A new routine (compo_flux_update) has been created to update the tracer fluxes in vdfmain.

This removes some of the tracer/composition-specific logic out of vdfmain itself, making the code clearer.

There is also a bug-fix to the test for whether any composition tracers are in use (NGEMS is *not* the right variable, is it only refers to tracers which are potentially assimilated).

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 compo_flux_update.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 local_arrays_ini.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (IFSAUX): `abor1.intfb.h abor1.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F90 GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.h LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h`

LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
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ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
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4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
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sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
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Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 rttov_locpat_ad.F90 rttov_-locpat_k.F90 rttov_locpat_tl.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Johannes Flemming, Zak Kipling - naj_CY45R1_gfasretrieve_update - BIT IDENTICAL

CAMS chemistry script update (IFS-503)

- replace stage command with retrieve command in get_nrt_fire
- remove archiving of reduced number of chemical species in case of OD_MODE

Zak Kipling - paf_CY45R1_GHG_rttov_esuite - BIT IDENTICAL

Introduce LGHG_ASSIM flag to choose whether CO2 and CH4 are in control vector and LGHG_RTTOV to be able to use CAMS CO2 in RTTOV (IFS-505)

This modifications will allow testing the interactions between CAMS CO2 and RTTOV in the assimilation of radiances in NWP.

The default values of the flags are LGHG_ASSIM=True and LGHG_RTTOV=False which is the current configuration of the GHG analysis. The LGHG_RTTOV flag should only be switched on in research experiments, as further investigation of its impact is still required.

When LMACC is false the results are bit identical with esuite.

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 vpos_prep.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_-gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 jo_table_-mod.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomaneb.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 reo3sin.F90 sugoms.F90 thin_-red_presort.F90 bgobs.F90 cobs.F90 cobsad.F90 departure_jo.F90 hinth.F90 hretr_-rad.F90 rad1cemis.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 gems_-init_ad.F90 gems_init_tl.F90 gems_tend_ad.F90 gems_tend_tl.F90 ghg_main.F90 local_arrays_ini.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 pos_prepgfl.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 estsig.F90 estsiga.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 rdfpinc.F90 suanebuf.F90 suinfce.F90 suinrenormfce.F90 sujb.F90 sujbwavelet.F90 sujbwavelet_stdevs.F90 vec2gp.F90 writelct.F90 writesd.F90`

Files modified (IFSAUX): `abor1.intfb.h abor1.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h`

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AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
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GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
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ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
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4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
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ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
```

read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h
update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90
b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-
gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 rttov_ec.F90 rttov_convert_-
profile_units.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Zak Kipling - cxzk_CY45R2_COMPO_for_46R1 - BIT IDENTICAL

Optimise triggers for CAMS "cycling forecast" experiment (IFS-509)

CAMS "cycling forecast" experiments (i.e. prepIFS type "fc" with LMACC=true) take meteorological conditions from INIEXPVER, but composition fields from the previous forecast cycle except at the very start of the experiment.

These composition fields are read in by prep_chem (for reactive gases) or getfcdata (for aerosols and greenhouse gases), which means these scripts will fail if they run before the previous cycle's model task has completed (or strictly, reached the necessary step).

In 45r1 we modified the inigroup trigger for the LMACC=true case to delay the whole family until the previous cycle had completed. This prevented failures but was unnecessary, as there is no need for getini , wavini, or inidata_ { paral , serial } to wait.

The new implementation no longer modifies the inigroup trigger, but adds the necessary trigger on prep_chem (if present) or getfcdata directly, which allows the experiment to progress more efficiently when retrieving or interpolating INIEXPVER has a long wait.

This has been implemented for both the SMS and ecFlow versions of the "fc" experiment type.

Files modified (CMAKE): `intfb.cmake`

Files modified (IFS): `postphy.F90 bascoe_chem_ini.F90 bascoe_hetconst.F90 bascoe_-
kpp_Rates.F90 bascoe_wetdep.F90 bascoe_zenith_fct.F90 bascoetm5_chem_ini.F90
bascoetm5_noymass.F90 chem_bascoe.F90 chem_bascoetm5.F90 chem_init.F90 chem_-
main.F90 chem_mocage.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_-
diurnal.F90 mocage_chem_ini.F90 mocage_krat_racmobus.F90 tm5_calrates.F90 tm5_-
chem_ini.F90 tm5_do_ebi.F90 tm5_do_ebi_tc02b.F90 tm5_kpp_Fun.F90 tm5_kpp_-
Jacobian.F90 tm5_kpp_LinearAlgebra.F90 tm5_kpp_Rates.F90 tm5_kpp_initialize.F90
tm5_kpp_update_cifs_conc.F90 tm5_photo_flux.F90 tm5_photorates_tropo.F90 tm5_-
rbud.F90 tm5_v0_kpp_update_cifs_conc.F90 tm5_wetchem.F90 tm5_wetchem_point.F90
gp_model.F90 hpos.F90 vpos_prep.F90 aer_dust.F90 aer_seasalt.F90 ukca_aero_-
step.F90 ukca_aero_step_ifs.F90 ukca_ageing.F90 ukca_binapara77.F90 ukca_-
calc_coag_kernel.F90 ukca_calc_drydiam.F90 ukca_calcminmaxgc.F90 ukca_calcminmaxndmdt
ukca_calcnucrate.F90 ukca_check_md_nd.F90 ukca_chem_ifs.F90 ukca_cloudproc.F90
ukca_coag_coff_v.F90 ukca_coagwithnucl.F90 ukca_cond_coff_v.F90 ukca_conden.F90
ukca_dcoff_par_av_k.F90 ukca_ddepaer.F90 ukca_impc_scav.F90 ukca_ingridg.F90
ukca_mode_ems.F90 ukca_mode_ems_ifs.F90 ukca_no3nh4.F90 ukca_offl_ox.F90 ukca_-
prim_car.F90 ukca_prim_du.F90 ukca_prim_du2.F90 ukca_prim_soa.F90 ukca_prim_-
ss.F90 ukca_prim_su.F90 ukca_radaer_compute_aod.F90 ukca_radaer_ifs.F90 ukca_-
radaer_init.F90 ukca_radaer_lut_in.F90 ukca_radaer_read_luts.F90 ukca_radaer_-
read_precalc.F90 ukca_radaer_set_thermodynamic.F90 ukca_rainout.F90 ukca_-
remode.F90 ukca_sedim.F90 ukca_sedimnt.F90 ukca_so2so4.F90 ukca_solvecoagnucl_-
v.F90 ukca_vapour.F90 ukca_vgrav.F90 ukca_vgrav_av_k.F90 ukca_volume_mode.F90
ukca_water_content_v.F90 ukca_wetox.F90 bascoe_module.F90 bascoetm5_module.F90
drydep_par.F90 field_definitions.F90 field_gfl_wrapper.F90 gfl_subs_mod.F90
iogride_mod.F90 jo_table_mod.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90
parfpos.F90 radiation_setup.F90 rrtmg_sw_reftra.F90 surface_fields_mix.F90
tm5_chem_module.F90 tm5_kpp_JacobianSP.F90 tm5_kpp_Parameters.F90 tm5_photolysis_-
new.F90 type_gflflds.F90 ukca_constants.F90 ukca_mode_setup.F90 ukca_radaer_-
comptype.F90 ukca_radaer_lut_mod.F90 ukca_radaer_modetype.F90 ukca_radaer_-
precalc_mod.F90 ukca_radaer_struct_mod.F90 ukca_radaer_tlut_mod.F90 ukca_-
setup_indices.F90 varbc_to3.F90 yo_aero_m7.F90 yo_aero_trac.F90 yoeaeratm.F90
yoeaermap.F90 yoeaersnk.F90 yoeaersrc.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90
yomaneb.F90 yomchem.F90 yomcompo.F90 yomgrib.F90 yomphyder.F90 naeaer.nam.h
namafn.nam.h namchem.nam.h namcompo.nam.h namgfl.nam.h defrun.F90 reo3sin.F90
sugoms.F90 gp_model_oops.F90 aer_lidsimad.F90 aer_lidsimop.F90 aer_lidsimtl.F90
aod_dualcv_tl.F90 bgobs.F90 co2slicing.F90 co2slicing_ml.F90 cobs.F90 cobsad.F90
hretr_conv.F90 obsop_composition.F90 rao_ad.F90 rao_op.F90 rao_tl.F90 aer_-
bdgtmss.F90 aer_clim.F90 aer_climg.F90 aer_climz.F90 aer_clist.F90 aer_diagglomap.F90`

aer_drydep.F90 aer_drydep_ad.F90 aer_drydep_tl.F90 aer_drydepvel.F90 aer_-
no3nh4.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_-
rad.F90 aer_radon.F90 aer_resuspension.F90 aer_rrtm.F90 aer_scavin.F90 aer_-
sdust.F90 aer_sedim.F90 aer_so2so4.F90 aer_so2so4_v2.F90 aer_src.F90 aer_-
ssalt.F90 aer_ssalt_grythe.F90 aer_ssalt_ms.F90 aer_tau.F90 aer_tau2mixr.F90
aer_unit_conv.F90 aerini_layer.F90 aero_init.F90 callpar.F90 callparad.F90
callpartl.F90 chem_initflux.F90 chem_main_layer.F90 chemini_layer.F90 compo_-
flux_update.F90 ddr_laminar_res.F90 ddr_surf_res1.F90 ddr_we_season.F90 depvel_-
wsl.F90 gems_init.F90 gems_init_ad.F90 gems_init_tl.F90 gems_tend_ad.F90 gems_-
tend_tl.F90 local_arrays_fin.F90 local_arrays_ini.F90 m7.F90 m7_aero_prop.F90
m7_averageproperties.F90 m7_coaset.F90 m7_coat.F90 m7_concoag.F90 m7_cumnor.F90
m7_dconc.F90 m7_delcoa.F90 m7_dgas.F90 m7_dnum.F90 m7_drydep.F90 m7_emi.F90
m7_emi_car.F90 m7_emi_dms.F90 m7_emi_du.F90 m7_emi_so2.F90 m7_emi_ss_lsce.F90
m7_emi_ss_mon.F90 m7_equil.F90 m7_equimix.F90 m7_equiz.F90 m7_interface.F90
m7_logtail.F90 m7_negat.F90 m7_nuck.F90 m7_nucl_ku.F90 m7_nucl_ve.F90 m7_-
sedimentation.F90 m7_wetdep.F90 rndecay.F90 su_aerm7.F90 su_aerop.F90 su_-
aerp.F90 su_aerw.F90 suphec.F90 vdfmain.F90 vdfouter.F90 radintg.F90 radvis.F90
aerod_ad.F90 aerod_op.F90 aerod_tl.F90 pos_prepgfl.F90 ppch4.F90 su_surf_-
flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90
sugfl3.F90 aerlid_setup.F90 estsig.F90 estsiga.F90 rdfpinc.F90 suanebuf.F90
suinfce.F90 suinrenormfce.F90 sujb.F90 sujbwavelet.F90 sujbwavelet_stdevs.F90
surad.F90 vec2gp.F90 writelct.F90 writesd.F90

Files modified (ODB): b2o_convert_modisaer.F90

Files modified (RADIATION): radiation_aerosol_optics_data.F90

Files modified (SATRAD): getcparam.h cparam.F90 mod_cparam.F90 bufr_screen_reo3_-
superob.F90 gensatim.F90 co2cld.F90 getcparam.F90 rttov_ec.F90 rttov_ec_ad.F90
rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90
rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (SURF): surfexcdriver.F90 surfexcdriver.h surfexcdriver_ctl_mod.F90
vexcs_mod.F90 vsurf_mod.F90

Zak Kipling, Julie Letertre-Danczak - cxzk_CY45R2_COMPO_for_46R1 - BIT IDENTICAL

Output near-surface aerosol extinctionabsorption at 0% RH (IFS-512)

In 45r1, we extended the aerosol diagnostics with near-surface extinction and absorption at fixed RH (40% and 50%) for three wavelengths (400nm, 550nm, 670nm) suitable for comparison to nephelometer observations.

However, it would also be very useful to have dry (0% RH) values for this.

These will now be output on the next 6 levels of 210024 to those that were already in use: | | |*50%*|*40%*|*0%*| |*Extinction***|*550nm*|L15|L21| L27| | |*400nm*|L16| L22| L28| | |*670nm*|L17| L23| L29| | | | | | |*Absorption*|*550nm*| L18| L24| L3
| |*400nm*| L19| L25| L31| | |*670nm*| L20| L26| L32|

Files modified (CMAKE): intfb.cmake

Files modified (IFS): postphy.F90 bascoe_chem_ini.F90 bascoe_hetconst.F90 bascoe_-
kpp_Rates.F90 bascoe_wetdep.F90 bascoe_zenith_fct.F90 bascoetm5_chem_ini.F90
bascoetm5_noymass.F90 chem_bascoe.F90 chem_bascoetm5.F90 chem_init.F90 chem_-
main.F90 chem_mocage.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_-
diurnal.F90 mocage_chem_ini.F90 mocage_krat_racmobus.F90 tm5_calrates.F90 tm5_-
chem_ini.F90 tm5_do_ebi.F90 tm5_do_ebi_tc02b.F90 tm5_kpp_Fun.F90 tm5_kpp_-
Jacobian.F90 tm5_kpp_LinearAlgebra.F90 tm5_kpp_Rates.F90 tm5_kpp_initialize.F90
tm5_kpp_update_cifs_conc.F90 tm5_photo_flux.F90 tm5_photorates_tropo.F90 tm5_-
rbud.F90 tm5_v0_kpp_update_cifs_conc.F90 tm5_wetchem.F90 tm5_wetchem_point.F90
gp_model.F90 hpos.F90 vpos_prep.F90 aer_dust.F90 aer_seasalt.F90 ukca_aero_-
step.F90 ukca_aero_step_ifs.F90 ukca_ageing.F90 ukca_binapara77.F90 ukca_-
calc_coag_kernel.F90 ukca_calc_drydiam.F90 ukca_calcminmaxgc.F90 ukca_calcminmaxndmdt
ukca_calcnucrate.F90 ukca_check_md_nd.F90 ukca_chem_ifs.F90 ukca_cloudproc.F90
ukca_coag_coff_v.F90 ukca_coagwithnucl.F90 ukca_cond_coff_v.F90 ukca_conden.F90
ukca_dcoff_par_av_k.F90 ukca_ddepaer.F90 ukca_impc_scav.F90 ukca_ingridg.F90
ukca_mode_ems.F90 ukca_mode_ems_ifs.F90 ukca_no3nh4.F90 ukca_offl_ox.F90 ukca_-
prim_car.F90 ukca_prim_du.F90 ukca_prim_du2.F90 ukca_prim_soa.F90 ukca_prim_-
ss.F90 ukca_prim_su.F90 ukca_radaer_compute_aod.F90 ukca_radaer_ifs.F90 ukca_-
radaer_init.F90 ukca_radaer_lut_in.F90 ukca_radaer_read_luts.F90 ukca_radaer_-
read_precalc.F90 ukca_radaer_set_thermodynamic.F90 ukca_rainout.F90 ukca_-
remode.F90 ukca_sedim.F90 ukca_sedimnt.F90 ukca_so2so4.F90 ukca_solvecoagnucl_-
v.F90 ukca_vapour.F90 ukca_vgrav.F90 ukca_vgrav_av_k.F90 ukca_volume_mode.F90
ukca_water_content_v.F90 ukca_wetox.F90 bascoe_module.F90 bascoetm5_module.F90
drydep_par.F90 field_definitions.F90 field_gfl_wrapper.F90 gfl_subs_mod.F90
iogride_mod.F90 jo_table_mod.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90
parfpos.F90 radiation_setup.F90 rrtmg_sw_reftra.F90 surface_fields_mix.F90
tm5_chem_module.F90 tm5_kpp_JacobianSP.F90 tm5_kpp_Parameters.F90 tm5_photolysis_-
new.F90 type_gflflds.F90 ukca_constants.F90 ukca_mode_setup.F90 ukca_radaer_-
comptype.F90 ukca_radaer_lut_mod.F90 ukca_radaer_modetype.F90 ukca_radaer_-
precalc_mod.F90 ukca_radaer_struct_mod.F90 ukca_radaer_tlut_mod.F90 ukca_-
setup_indices.F90 varbc_to3.F90 yo_aero_m7.F90 yo_aero_trac.F90 yoeaeratm.F90
yoeaermap.F90 yoeaersnk.F90 yoeaersrc.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90
yomaneb.F90 yomchem.F90 yomcompo.F90 yomgrib.F90 yomphyder.F90 naeaer.nam.h
namafn.nam.h namchem.nam.h namcompo.nam.h namgfl.nam.h defrun.F90 reo3sin.F90
sugoms.F90 gp_model_oops.F90 aer_lidsimad.F90 aer_lidsimop.F90 aer_lidsimtl.F90
aod_dualcv_tl.F90 bgobs.F90 co2slicing.F90 co2slicing_ml.F90 cobs.F90 cobsad.F90
hretr_conv.F90 obsop_composition.F90 rao_ad.F90 rao_op.F90 rao_tl.F90 aer_-
bdgtmss.F90 aer_clim.F90 aer_climg.F90 aer_climz.F90 aer_clist.F90 aer_diagglomap.F90
aer_drydep.F90 aer_drydep_ad.F90 aer_drydep_tl.F90 aer_drydepvel.F90 aer_-
no3nh4.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_-
rad.F90 aer_radon.F90 aer_resuspension.F90 aer_rrtm.F90 aer_scavin.F90 aer_-
sdust.F90 aer_sedim.F90 aer_so2so4.F90 aer_so2so4_v2.F90 aer_src.F90 aer_-
ssalt.F90 aer_ssalt_grythe.F90 aer_ssalt_ms.F90 aer_tau.F90 aer_tau2mixr.F90
aer_unit_conv.F90 aerini_layer.F90 aero_init.F90 callpar.F90 callparad.F90
callpartl.F90 chem_initflux.F90 chem_main_layer.F90 chemini_layer.F90 compo_-
flux_update.F90 ddr_laminar_res.F90 ddr_surf_res1.F90 ddr_we_season.F90 depvel_-
wsl.F90 gems_init.F90 gems_init_ad.F90 gems_init_tl.F90 gems_tend_ad.F90 gems_-
tend_tl.F90 local_arrays_fin.F90 local_arrays_ini.F90 m7.F90 m7_aero_prop.F90

m7_averageproperties.F90 m7_coaset.F90 m7_coat.F90 m7_concoag.F90 m7_cumnor.F90 m7_dconc.F90 m7_delcoa.F90 m7_dgas.F90 m7_dnum.F90 m7_drydep.F90 m7_emi.F90 m7_emi_car.F90 m7_emi_dms.F90 m7_emi_du.F90 m7_emi_so2.F90 m7_emi_ss_lsce.F90 m7_emi_ss_mon.F90 m7_equil.F90 m7_equimix.F90 m7_equiz.F90 m7_interface.F90 m7_logtail.F90 m7_negat.F90 m7_nuck.F90 m7_nucl_ku.F90 m7_nucl_ve.F90 m7_sedimentation.F90 m7_wetdep.F90 rndecay.F90 su_aerm7.F90 su_aerop.F90 su_aerp.F90 su_aerw.F90 suphec.F90 vdfmain.F90 vdfouter.F90 radintg.F90 radvis.F90 aerod_ad.F90 aerod_op.F90 aerod_tl.F90 pos_prepgfl.F90 ppch4.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90 aerlid_setup.F90 estsig.F90 estsiga.F90 rdfpinc.F90 suanebuf.F90 suinfce.F90 suinrenormfce.F90 sujb.F90 sujbwavelet.F90 sujbwavelet_stdevs.F90 surad.F90 vec2gp.F90 writelct.F90 writesd.F90

Files modified (ODB): b2o_convert_modisaer.F90

Files modified (RADIATION): radiation_aerosol_optics_data.F90

Files modified (SATRAD): getcparam.h cparam.F90 mod_cparam.F90 bufr_screen_reo3_superob.F90 gensatim.F90 co2cld.F90 getcparam.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (SURF): surfexcdriver.F90 surfexcdriver.h surfexcdriver_ctl_mod.F90 vexcs_mod.F90 vsurf_mod.F90

Noureddine Semane, Antje Inness, Julie Letertre-Danczak, Rossana Dragani, Zak Kipling - nens_CY45R1_S5P - BIT IDENTICAL

S5P passive monitoring in IFS (IFS-562)

Passive monitoring of Sentinel-5P in IFS in NWP mode, building on what [~std] has already implemented for CAMS mode.

Files modified (ENKF): obs_constants.F90

Files modified (IFS): call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 varbc_to3.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90

supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F9
jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90 surad.F90

Files modified (IFSAUX): abor1.intfb.h abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-

opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h
update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90

b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_-gmi_swaths.F90

Files modified (SATRAD): cparam.F90 mod_cparam.F90 mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Rossana Dragani - st3_CY45R2_new_O3_instruments_onv6 - BIT IDENTICAL

Technical changes for new ozone products (IFS-603)

Technical changes to monitor NOAA-20 OMPS and MetOp-C GOME-2 ozone products

Files modified (AEOLUS): arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_-l2bp_primary_ec.F90

Files modified (ALGOR): minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_-caller.h m1qn3a.F90

Files modified (ATLAS_APPS): CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_-module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_-module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_-module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_-weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_-sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_-wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_args_module.F90 dwarf_command_module.F90 dwarf_data_module.F90 dwarf_util_module.F90

Files modified (BL): dynamic_symbols.c mf_blacklist.b

Files modified (CMAKE): algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake prepdata.cmake satrad.cmake ssa.cmake target_ignore_missing_symbols.cmake trans.cmake wam.cmake

Files modified (DUMMY): aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_-suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_-horiz_flt.F suefpbip.F sueinfce.F

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90

Files modified (FIELDMAN): FieldSet.hpp

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90 cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_-gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_-dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90 cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90

cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 fv_gradient.F90
gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_-
spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90
gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90
gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_-
conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90
gnhqe_tndlagadiab_gw.F90 gnhqe_tndlagadiab_svd.F90 gnhqe_xxd.F90 gnhsvd2gw.F90
gnhx.F90 gp_derivatives.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_-
kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90
gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90 gpgw.F90
gphpre.F90 gpinislb.F90 gpmktend.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90 gprcph.F90
gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90 gpvcts.F90
gpvcw.F90 gpxx.F90 lacdyn.F90 lacdynad.F90 lacdynshw.F90 lacdynshwad.F90 lacdynshwtl.
lacdyntl.F90 ladad.F90 ladine.F90 ladinead.F90 ladinetl.F90 laitre_gmv.F90
lanhqesi.F90 lanhsi.F90 lanhsib.F90 lapinea.F90 lapinea5.F90 lapineaad.F90
lapineatl.F90 lapineb.F90 lapinebad.F90 lapinebtl.F90 larche.F90 larche5.F90
larchead.F90 larchetl.F90 larcin2.F90 larcin2ad.F90 larcin2tl.F90 larcina.F90
larcinaad.F90 larcinatl.F90 larcinb.F90 larcinbad.F90 larcinha.F90 larcinhb.F90
larmes.F90 larmes5.F90 larmesad.F90 larmestl.F90 lassie.F90 lassietl.F90 latte_-
bbc.F90 latte_kappa.F90 latte_kappaad.F90 latte_kappatl.F90 lattes.F90 lattesad.F90
lattestl.F90 lattex.F90 lavabo.F90 lavabotl.F90 lavent.F90 laventad.F90 laventtl.F90
postphy.F90 si_cccor.F90 sidd.F90 sigam.F90 silkap.F90 silkapi.F90 sinhqe_-
seve.F90 sinhqe_vderi.F90 siptp.F90 siqq.F90 siseve.F90 siskap.F90 siskapi.F90
sitnu.F90 spchor.F90 spcsi.F90 spnh_conv_nhvar.F90 spnh_conv_prhs.F90 spnhqesi.F90
spnhqesi_prodskap.F90 spnhsi.F90 tropo_tep.F90 aro_adjust.h aro_ground_diag.h
aro_ground_diag_2isba.h aro_lima.h aro_rain_ice.h aroini_micro.h aroini_micro_-
lima.h aroini_nsv.h deello.intfb.h eapply_pll_recf.intfb.h ebicli.intfb.h ebipos.intf
ecoupl1.intfb.h ecoupl1ad.intfb.h ecoupl2.intfb.h ecoupl2ad.intfb.h ecvargpad.intfb.h
ecvargptl.intfb.h ediagb_psot.intfb.h efpfilter.intfb.h eincli1.intfb.h eincli10.intf
eincli2.intfb.h eincli3.intfb.h eincli4.intfb.h eincli5.intfb.h eincli6.intfb.h
eincli7.intfb.h eincli8.intfb.h eincli9.intfb.h einflation_mean.intfb.h elascaw.intfb
elsac.intfb.h elsin0ta.intfb.h elswa3.intfb.h ereadsigmab.intfb.h ereadstd.intfb.h
erlbc_post_req.intfb.h escaljgs.intfb.h eseimpls.intfb.h eseimplsad.intfb.h
esetup_pll_recf.intfb.h eslextpol.intfb.h espcm.intfb.h espfp.intfb.h espnhqesi.intfb
espnhqesi_prodskap.intfb.h etenc.intfb.h etransdir_nhconvprhs.intfb.h etransinv_-
mdl.intfb.h etransinv_nhconv.intfb.h etransinv_nhconvprhs.intfb.h euvcopy.intfb.h
evarjkini.intfb.h ewrlsgrad.intfb.h fp2sx1.h fp2sx2.h fpboyd.intfb.h fpezo2h.intfb.h
fpezone.intfb.h fpfillb.intfb.h gp_horiz_flt.intfb.h gridfpossfx_init.h moevar.intfb.
ncerr.intfb.h posfpbipos.intfb.h prefpbipos.intfb.h prep2_real.h prep_step2.h
rdclimosfx.h readjbbal.intfb.h readjbbal_nc.intfb.h readjbdat96.intfb.h readjbdat96_-
nc.intfb.h suafn1sfx.h suafn2sfx.h suafn3sfx.h suedim.intfb.h suefpbip.intfb.h
suefpg3.intfb.h suegem_naml.intfb.h suehow1.intfb.h suehow2.intfb.h suehowlsm.intfb.h
sueinfce.intfb.h sueinif.intfb.h suejbtest.intfb.h suescal.intfb.h suescal_-
jb.intfb.h suescal_norms.intfb.h sufpcsfx.h sufpezo.intfb.h wrsfx.h incli0.F90
incli1.F90 incli10.F90 incli2.F90 incli3.F90 incli4.F90 incli5.F90 incli8.F90
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smos.F90 setup_tovscv.F90 sufglim.F90 sugoms.F90 suobarea.F90 suobs.F90 suobs_-
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aer_climz.F90 aer_clist.F90 aer_diagglomap.F90 aer_drydep.F90 aer_drydep_-
ad.F90 aer_drydep_tl.F90 aer_drydepvel.F90 aer_no3nh4.F90 aer_phy1.F90 aer_-
phy2.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_rad.F90 aer_radon.F90 aer_resuspension.F
aer_rrtm.F90 aer_scavin.F90 aer_sdust.F90 aer_sedim.F90 aer_so2so4.F90 aer_-
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surf_res1.F90 ddr_we_season.F90 depvel_wsl.F90 diag_clouds.F90 ec_phys.F90
ec_phys_ad.F90 ec_phys_drv.F90 ec_phys_drv_ad.F90 ec_phys_drv_tl.F90 ec_phys_-
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su0yomb.F90 su1yom.F90 su_grib_api.F90 su_surf_flds.F90 suafn.F90 suafn1.F90
suafn2.F90 suafn3.F90 sualdyn.F90 sualdynb.F90 suarg.F90 suarg_datestuff.F90
suatlas_mesh.F90 submat.F90 sucfu.F90 sucst.F90 suct0.F90 suctrl_gflattr.F90
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suhdvp.F90 suheg.F90 suiauinif.F90 suinif.F90 suinimoderr.F90 suinterpolator.F90
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write_ctlvec_grib.F90 write_grid_grib.F90 write_wavelet_initcv_grib.F90 wrresf.F90
add_moderr_tl.F90 addhysin.F90 addhysinad.F90 adtest.F90 aerlid_setup.F90 balvert.F90
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cvargpad.F90 cvargptl.F90 djbdy.F90 estsig.F90 estsiga.F90 evcost.F90 fltbgerr.F90
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suallr.F90 suallt.F90 suanebuf.F90 suecges.F90 suensmem.F90 suinep.F90 suineplap.F90
suinfce.F90 suinrenormfce.F90 suiomi.F90 sujb.F90 sujbbal.F90 sujbcor.F90 sujbcosu.F9
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upspec.F90 varcalc.F90 varflt_crt.F90 varflt_trunc.F90 vec2gp.F90 wavxform.F90
wrchres.F90 writelct.F90 writeoba.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): i_system.c facgrm.F90 fadgra.F90 fagote.F90 faieno.h falgra.h
faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.h isrchfltpv.body.h
lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_mod.F90 mpl_allgatherv_-
mod.F90 mpl_comm_split_mod.F90 mpl_end_mod.F90 mpl_gatherv_mod.F90 rttov_-
const.F90 rttov_ec_mod.F90 yomlun_ifsaux.F90 faconvgrib.F90 abor1.F90 dr_-
hook_util.F90 drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 hdf_dbase_mod.F90
odb2_dbase_mod.F90 odbserver_dbase_mod.F90 CMakeLists.txt test_dbase_performance.F90
test_dbase_view.F90 test_overhead_odb2.F90 test_parallel_distribute.F90

Files modified (NEMO): diahth.F90 zdfmxl.F90 arch-IBM_EKMAN_INGV.fcm namelist_-
cfg CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref
namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_-
ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90
diaar5.F90 diacfl.F90 diadct.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90
cla.F90 lbclnk.F90 lib_mpp.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90
sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_-
clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90
sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90 traldf.F90 tranxt.F90 trazdf.F90
trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90
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create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md

5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
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Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
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areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
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fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
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convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_-
atovs.F90 b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_gmi.F90 b2o_-
convert_grad.F90 b2o_convert_iasi.F90 b2o_convert_modisaer.F90 b2o_convert_-
msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_oscat.F90 b2o_convert_pilot.F90
b2o_convert_rain_rates.F90 b2o_convert_reo3.F90 b2o_convert_ssmis_1d.F90 b2o_-
convert_synop_land.F90 b2o_convert_tamdar.F90 b2o_convert_temp.F90 b2o_convert_-
temp_hires.F90 b2o_convert_windprofiler.F90 b2o_crc.c calc_azim.F90 get_varindex.F90
odb_target_ignore_missing_symbols.cmake sat_atovs_hyper.sql scat_ambig_select.sql
sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_4.sql decis_-
robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h sat_atovs.sql
sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h b2o_debug.h
cmaio.h odb_assoc_cols.h odb_it_members.h calc_azim.h codb.c datastream.F90
twindow.c b2o_functional.F90 b2o_get.F90 b2o_utility.F90 varindex_module.F90
bator_datetime_mod.F90 bator_decodbufr_mod.F90 bator_decodgrib_mod.F90 bator_-
decodhdf5_mod.F90 bator_decodnetcdf_mod.F90 bator_ecritures_mod.F90 bator_-
impr_mod.F90 bator_init_mod.F90 bator_lectures_mod.F90 bator_module.F90 bator_-
rad_postproc_mod.F90 bator_saisies_mod.F90 bator_util_mod.F90 bator_namelist.nam.h
ecma2ecmascr Bator.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h

AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria
AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90
FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h
GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc
IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.
IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF
LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h
LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 Logbook.interface.F90
LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h
ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h
ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte
ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90
ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen
ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.c
ObsBiasIncrementVARBC.h ObsBiasIncrementVARBC.interface.F90 ObsBiasLListsTOVSCV.F90
ObsBiasLListsVARBC.F90 ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90
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ObsSpaceODB.interface.F90 ObsVector.cc ObsVector.h ObsVector.interface.F90
StateIFS.cc StateIFS.h Trajectory.list.F90 VariablesIFS.interface.F90 ifs_-
init_wrapper.F90 instantiateObsAuxFactories.h instantiateObsErrorFactory.h
instantiateObsOpFactories.h instantiateTlmFactory.h mpi_wrapper.F90 pm_link_-
mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): matutils.F90 chgrib.c fillgaussgrib.F90 unbal_eda.F90
wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90
radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-
gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-
ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-
optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-
mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-
optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-
save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-
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camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_mie.F90 mod_mwatlas_-
m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_atlas.F90 mod_rttov_-
fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_test.F90 mod_screen_-
1c_bufrmsg.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90 rttov_-

chain.F90 rttov_coef_io_mod.F90 rttov_ec_settings.F90 rttov_fast_coef_utils_-
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hdf_coefs.F90 rttov_hdf_emissivity_io.F90 rttov_hdf_options_config_io.F90 rttov_-
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refl_mod.F90 rttov_tessem_mod.F90 rttov_test_k_mod.F90 rttov_test_mod.F90 rttov_-
types.F90 rttov_unix_env.F90 rttov_zutility.F90 mwave_ec_setopts.F90 mwave_-
emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_-
ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_screen.F90
bufr_screen_amsr2_1d.F90 bufr_screen_gmi_1d.F90 bufr_screen_reo3_superob.F90
bufr_screen_ssmis_1d.F90 create_aer_clim_prof.F90 example_aer_file_fwd.F90
example_aer_param_fwd.F90 example_cld_file_fwd.F90 example_cld_param_fwd.F90
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calcemis_ir_k.F90 rttov_calcemis_ir_tl.F90 rttov_calcemis_mw_ad.F90 rttov_-
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setup_profile.F90 rttov_dom_setup_profile_ad.F90 rttov_dom_setup_profile_-
k.F90 rttov_dom_setup_profile_tl.F90 rttov_dom_tl.F90 rttov_erfcx.F90 rttov_-
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intavg_prof.F90 rttov_intavg_prof_ad.F90 rttov_intavg_prof_k.F90 rttov_intavg_-
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ad.F90 rttov_opdpscattir_k.F90 rttov_opdpscattir_tl.F90 rttov_opts_eq.F90 rttov_-
profaux.F90 rttov_profaux_ad.F90 rttov_profaux_k.F90 rttov_profaux_tl.F90 rttov_-
refsun.F90 rttov_refsun_ad.F90 rttov_refsun_k.F90 rttov_refsun_tl.F90 rttov_-
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7_ad.F90 rttov_setpredictors_7_k.F90 rttov_setpredictors_7_tl.F90 rttov_setpredictors
8.F90 rttov_setpredictors_8_ad.F90 rttov_setpredictors_8_k.F90 rttov_setpredictors_-
8_tl.F90 rttov_setpredictors_9.F90 rttov_setpredictors_9_ad.F90 rttov_setpredictors_
9_k.F90 rttov_setpredictors_9_tl.F90 rttov_tl.F90 rttov_transmit.F90 rttov_-
transmit_9_solar.F90 rttov_transmit_9_solar_ad.F90 rttov_transmit_9_solar_-
k.F90 rttov_transmit_9_solar_tl.F90 rttov_transmit_ad.F90 rttov_transmit_-
k.F90 rttov_transmit_tl.F90 rttov_user_options_checkinput.F90 rttov_user_-
profile_checkinput.F90 rttov_add_scatt_prof.F90 rttov_alloc_emis_ret_terms.F90
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rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_-
ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_-
tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_-

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Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_-fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_-windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_-bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_-fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h surfws.h osm.cfg srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90 srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_-mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_-ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 suvexc_-mod.F90 vexcs_mod.F90 vlamsk_mod.F90 vsurf_mod.F90 yos_exc.F90 callpar1s.F90 cpg1s.F90 dtforc.F90 netcdf_utils.F90 rdsupr.F90 suct01s.F90 sudcdf.F90 sugdi1s.F90 sugp1s.F90 suinif1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90 wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 mpl_mod_ctl.F90

Files modified (TRANS): dealloc_resol_mod.F90

Files modified (WAM): getclo.F uras3a.F abort1.F abort1.F90 adjust.F adjust.F90 airsea.F airsea.F90 aki.F aki.F90 aki_ice.F aki_ice.F90 altas.F90 avoidpeaks.F avoidpeaks.F90 betadef.F betadef.F90 bouinpt.F bouinpt.F90 bouint.F bouint.F90 buildstress.F buildstress.F90 cal_second_order_spec.F cal_second_order_spec.F90 check.F check.F90 checkcfl.F checkcfl.F90 chesig.F chesig.F90 chief.F chief.F90 cigetdeac.F cigetdeac.F90 cimsstrn.F cimsstrn.F90 cireduce.F cireduce.F90 ciwabr.F ciwabr.F90 ciwaf.F ciwaf.F90 class_wgrib.F clean_outbs.F closend.F closend.F90 combinepeaks.F combinepeaks.F90 command.F confile.F confile.F90 cpfdb.F create_-

wam_bathymetry.F create_wam_bathymetry.F90 create_wam_bathymetry_ETOPO1.F create_-
wam_bathymetry_ETOPO1.F90 crossas.F crossas.F90 crossw.F crossw.F90 ctuw.F
ctuw.F90 current2wam.F current2wam.F90 decode_integrated_parameter.F decode_-
integrated_parameter.F90 decode_point_spectra.F decode_point_spectra.F90 dev.F
dev.F90 difdate.F difdate.F90 docombine.F docombine.F90 dotdc.F dotdc.F90 dummy_-
alt.F dummy_alt.F90 dummy_cray.F dummy_eclib.F dummy_eclib.F90 dummy_fdb.F
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dummy_no_nemo.F dummy_no_nemo.F90 ersfile.F ersfile.F90 expand_string.F expand_-
string.F90 fdur.F fdur.F90 femean.F femean.F90 femeanws.F femeanws.F90 file_-
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mfredir.F mfredir.F90 mgrid.F mgrid.F90 micep.F micep.F90 mintf.F mintf.F90
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outunwamfield.F outunwamfield.F90 outunwamtest.F outunwamtest.F90 outwint.F90
outwnorm.F outwnorm.F90 outwpsp.F90 outwspec.F outwspec.F90 outwspec_io_serv.F90
outxt.F outxt.F90 packi.F packi.F90 packr.F packr.F90 parmean.F parmean.F90
partitioning.F partitioning.F90 peak.F peak.F90 peak_ang.F90 peak_freq.F peak_-
freq.F90 peakfri.F peakfri.F90 preproc.F preproc.F90 preset.F preset.F90 preset_-

wgrib_template.F preset_wgrib_template.F90 prewind.F prewind.F90 propag_wam.F
propag_wam.F90 propags.F propags.F90 propags1.F propags1.F90 propags2.F propags2.F90
propdot.F propdot.F90 prspp.F prspps.F readbou.F readbou.F90 readcur.F readfl.F
readfl.F90 readpre.F readpre.F90 readsarspec.F readsarspec.F90 readsat.F readsat.F90
readsta.F readsta.F90 readstress.F readstress.F90 readwgrib.F readwgrib.F90
readwind.F readwind.F90 rearrngsar.F rearrngsar.F90 recvnemofields.F recvnemofields.F
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runwam.F90 saras.F saras.F90 savrest.F savspec.F savspec.F90 savstress.F savstress.F9
sbottom.F sbottom.F90 scosfl.F scosfl.F90 sdepthlim.F90 sdissip.F90 sdissip_-
ard.F90 sdissip_jan.F sdissip_jan.F90 sdiwbk.F sdiwbk.F90 se10mean.F se10mean.F90
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secondhh.F90 secondhh_gen.F secondhh_gen.F90 secspom.F secspom.F90 semean.F
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phi_hf.F90 tauhf.F taut_z0.F taut_z0.F90 threshhold.F threshhold.F90 timin.F
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u2l1cr.F90 wam_user_clock.F wam_user_clock.F90 wamadszidl.F wamadszidl.F90
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netcdf_fct.F90 wav_netcdf_var.F90 yow_rank_gloloc.F90 yowaltas.F yowaltas.F90
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yowtrains.F90 yowubuf.F yowubuf.F90 yowunit.F yowunit.F90 yowunpool.F yowunpool.F90
yowwami.F yowwami.F90 yowwind.F yowwind.F90 yowwndg.F yowwndg.F90

Samuel Remy, Vincent Huijnen, Zak Kipling - disr_CY45R2_CAMS_chem_rev1_CAMS_v1.1_-newscav/ - BIT IDENTICAL

CAMS contribution for 46R1 : new aerosol scavenging and smaller scale developments (IFS-606)

This branch includes new contribution from CAMS for the future 46R1:

- Update of chemical scavenging of aerosols (aerc_scav, used if LAERSCAV_CHEM = true), experiment TM5_CONDFLUX of the scavenging deliverable report,
- Update of the operational in-cloud scavenging of aerosols (aer_scavin, used if LAERSCAV = true), experiment OPER_SEPARATED of the scavenging deliverable report,
- Input of NH4 tendencies from TM5 into aerosols, in addition to gas partitioning production of NH4,
- Tropospheric diagnostics of aerosol chemical production
- Debug of online dry deposition of chemical species

Samuel Remy, Zak Kipling - disr_CY45R2_CAMS_GLOMAP_NEWDEV - BIT IDENTICAL

CAMS contribution for 46R1 : IFS-GLOMAP developments (IFS-607)

This branch includes new contribution from CAMS for the future 46R1 IFS-GLOMAP:

- Recoding and debugging of in-cloud and below cloud scavenging,
- Integration of IFS-GLOMAP in the volcanic aerosol simulation framework,
- IFS-GLOMAP processes now output in chemical diagnostics,
- Computation of SAD and model level extinction, absorption and asymmetry factor) for chemistry
- no anthropogenic (scaled on CO) input used anymore,
- output of AOD and AAOD at 6 wavelengths,
- reduction in supercoarse SS emissions

Files modified (CMAKE): `intfb.cmake`

Files modified (IFS): `postphy.F90 bascoe_chem_ini.F90 bascoe_hetconst.F90 bascoe_kpp_Rates.F90 bascoe_wetdep.F90 bascoe_zenith_fct.F90 bascoetm5_chem_ini.F90 bascoetm5_noymass.F90 chem_bascoe.F90 chem_bascoetm5.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_diurnal.F90 mocage_chem_ini.F90 mocage_krat_racmobus.F90 tm5_calrates.F90 tm5_chem_ini.F90 tm5_do_ebi.F90 tm5_do_ebi_tc02b.F90 tm5_kpp_Fun.F90 tm5_kpp_Jacobian.F90 tm5_kpp_LinearAlgebra.F90 tm5_kpp_Rates.F90 tm5_kpp_initialize.F90 tm5_kpp_update_cifs_conc.F90 tm5_photo_flux.F90 tm5_photorates_tropo.F90 tm5_rbud.F90 tm5_v0_kpp_update_cifs_conc.F90 tm5_wetchem.F90 tm5_wetchem_point.F90 gp_model.F90 hpos.F90 vpos_prep.F90 aer_dust.F90 aer_seasalt.F90 ukca_aero_diag_ifs.F90 ukca_aero_step.F90 ukca_aero_step_ifs.F90 ukca_ageing.F90 ukca_binapara77.F90 ukca_calc_coag_kernel.F90 ukca_calc_drydiam.F90 ukca_calcminmaxgc.F90 ukca_calcminmaxndmdt.F90 ukca_calcnucrate.F90 ukca_check_md_nd.F90 ukca_chem_ifs.F90 ukca_cloudproc.F90 ukca_coag_coff_v.F90 ukca_coagwithnucl.F90 ukca_cond_coff_v.F90 ukca_conden.F90 ukca_dcoff_par_av_k.F90 ukca_ddepaer.F90 ukca_impc_scav.F90 ukca_ingridg.F90 ukca_mode_ems.F90 ukca_mode_ems_ifs.F90 ukca_no3nh4.F90 ukca_offl_ox.F90 ukca_prim_car.F90 ukca_prim_du.F90 ukca_prim_du2.F90 ukca_prim_soa.F90 ukca_prim_ss.F90 ukca_prim_su.F90 ukca_radaer_compute_aod.F90 ukca_radaer_compute_aodlev.F90 ukca_radaer_ifs.F90 ukca_radaer_init.F90 ukca_radaer_lut_in.F90 ukca_radaer_read_luts.F90 ukca_radaer_read_precalc.F90 ukca_radaer_set_thermodynamic.F90 ukca_radaerlev_ifs.F90 ukca_rainout.F90 ukca_remode.F90 ukca_sedim.F90 ukca_sedimnt.F90 ukca_so2so4.F90 ukca_solvecoagnucl_v.F90 ukca_vapour.F90 ukca_vgrav.F90 ukca_vgrav_av_k.F90 ukca_volume_mode.F90 ukca_water_content_v.F90 ukca_wetox.F90 bascoe_module.F90 bascoetm5_module.F90 drydep_par.F90 field_definitions.F90 field_gfl_wrapper.F90 gfl_subs_mod.F90 iogride_mod.F90 jo_table_mod.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90 parfpos.F90 radiation_setup.F90 rrtmg_sw_reftra.F90 surface_fields_mix.F90 tm5_chem_module.F90 tm5_kpp_JacobianSP.F90 tm5_kpp_Parameters.F90 tm5_photolysis_new.F90 type_gflflds.F90 ukca_constants.F90 ukca_mode_setup.F90 ukca_radaer_comptype.F90 ukca_radaer_lut_mod.F90 ukca_radaer_modetype.F90 ukca_radaer_precalc_mod.F90 ukca_radaer_struct_mod.F90`

ukca_radaer_tlut_mod.F90 ukca_setup_indices.F90 yo_aero_m7.F90 yo_aero_trac.F90 yoeaeratm.F90 yoeaermap.F90 yoeaersnk.F90 yoeaersrc.F90 yoeaervol.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomaneb.F90 yomchem.F90 yomcompo.F90 yomgrib.F90 yomphyder.F90 naeaer.nam.h naevol.nam.h namafn.nam.h namchem.nam.h namcompo.nam.h namgfl.nam.h defrun.F90 reo3sin.F90 sugoms.F90 gp_model_oops.F90 aer_lidsimad.F90 aer_lidsimop.F90 aer_lidsimtl.F90 aod_dualcv_tl.F90 bgobs.F90 co2slicing.F90 co2slicing_ml.F90 cobs.F90 cobsad.F90 hretr_conv.F90 obsop_composition.F90 rao_ad.F90 rao_op.F90 rao_tl.F90 aer_bdgtmss.F90 aer_clim.F90 aer_climg.F90 aer_climz.F90 aer_clist.F90 aer_diagglomap.F90 aer_drydep.F90 aer_drydep_ad.F90 aer_drydep_tl.F90 aer_drydepvel.F90 aer_glomapdiag_layer.F90 aer_no3nh4.F90 aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_rad.F90 aer_radon.F90 aer_resuspension.F90 aer_rrtm.F90 aer_scavin.F90 aer_sdust.F90 aer_sedim.F90 aer_so2so4.F90 aer_so2so4_v2.F90 aer_src.F90 aer_ssalt.F90 aer_ssalt_grythe.F90 aer_ssalt_ms.F90 aer_tau.F90 aer_tau2mixr.F90 aer_unit_conv.F90 aer_volce.F90 aerini_layer.F90 aero_init.F90 callpar.F90 callparad.F90 callpartl.F90 chem_initflux.F90 chem_main_layer.F90 chemini_layer.F90 compo_flux_update.F90 ddr_laminar_res.F90 ddr_surf_res1.F90 ddr_we_season.F90 depvel_wsl.F90 gems_init.F90 gems_init_ad.F90 gems_init_tl.F90 gems_tend_ad.F90 gems_tend_tl.F90 local_arrays_fin.F90 local_arrays_ini.F90 m7.F90 m7_aero_prop.F90 m7_averageproperties.F90 m7_coaset.F90 m7_coat.F90 m7_concoag.F90 m7_cumnor.F90 m7_dconc.F90 m7_delcoa.F90 m7_dgas.F90 m7_dnum.F90 m7_drydep.F90 m7_emi.F90 m7_emi_car.F90 m7_emi_dms.F90 m7_emi_du.F90 m7_emi_so2.F90 m7_emi_ss_lsce.F90 m7_emi_ss_mon.F90 m7_equil.F90 m7_equimix.F90 m7_equiz.F90 m7_interface.F90 m7_logtail.F90 m7_negat.F90 m7_nuck.F90 m7_nucl_ku.F90 m7_nucl_ve.F90 m7_sedimentation.F90 m7_wetdep.F90 rndecay.F90 su_aerm7.F90 su_aerop.F90 su_aerp.F90 su_aerw.F90 suphec.F90 vdfmain.F90 vdfouter.F90 radintg.F90 radvis.F90 aerod_ad.F90 aerod_op.F90 aerod_tl.F90 pos_prepgfl.F90 ppch4.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90 aerlid_setup.F90 estsig.F90 estsiga.F90 rdfpinc.F90 suanebuf.F9 suinfce.F90 suinrenormfce.F90 sujb.F90 sujbwavelet.F90 sujbwavelet_stdevs.F90 vec2gp.F90 writelct.F90 writesd.F90

Files modified (RADIATION): radiation_aerosol_optics_data.F90

Files modified (SATRAD): getcparam.h mod_cparam.F90 gensatim.F90 co2cld.F90 getcparam.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (SURF): surfexcdriver.F90 surfexcdriver.h surfexcdriver_ctl_mod.F90 vexcs_mod.F90 vsurf_mod.F90

Vincent Huijnen, Johannes Flemming, Samuel Remy - nk9_CY45R2_CAMS_chem_rev1_CAMS_-v1.1 - BIT IDENTICAL

Chemistry bug fixes for 46r1 (IFS-611)

-> chem_bascoetm5.F90 / chem_tm5.F90: fill in the NO3_A and NH4 tracers from aerosol counterparts when using LAERCHEM = true

-> chem_main.F90 /aer_phy3.F90 /callpar.F90: include the full NH3->NH4 chemical tendency into index 4 of PCHEM2AER , in case running with LAERNITRATE = true

-> aer_phy3.F90: Fix budget accumulation computation (IF LCHEM_DIA): prevent double-counting, and include all contributions

-> ddr_laminar_res.F90 / ddr_surf_res1.F90 : improved readability; bug-fix: in case LLWETVEG=false include contribution 1/ZLUDRY for resistance over vegetation, particularly affecting SO2, but also other dry deposition velocities.

-> module: bascoe_module.F90 / bascoetm5_module.F90: Updated and extended surface boundary conditions for CFC's and long-lived trace gases in case running with stratospheric chemistry.

-> tm5_kpp_parameters: bug fix setting NFIXST=52 (but this variable is actually not used)

Zak Kipling, Richard Forbes, Robin Hogan - cxzk_CY46R1_vis_aer2D - NON-METEOROLOGICAL

Visibility doesn't see aerosol if 3D climatology used (IFS-728)

If the 3D CAMS aerosol climatology is used (LAER3D=true, NAERMACC=1), the visibility diagnostic (vis, 3020) sees no contribution from aerosol, and the non-cloudy regions show almost uniformly as 100km.

This is because CLIMAER_LAYER gets the climatological aerosol at the surface using RADACA, which only handles the 2D climatology, whose variables are not loaded when LAER3D=true.

It appears that CLIMAER_LAYER therefore needs updating to a new mechanism for getting the climatology that supports the 3D version.

This will affect the operational configuration of 46R1, but for this one diagnostic parameter only.

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (IFS): `fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 parfpos.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 aer_phy3.F90 aer_src.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 uvradi.F90 suorog.F90 mod_ini.F90 suinfce.F90 sujbwavwri.F90`

Files modified (SATRAD): `bufr_screen_reo3_superob.F90 gensatim.F90`

Files modified (WAM): `wgrib2fdb.F90`

Zak Kipling, Antje Inness, Johannes Flemming, Samuel Remy - cxzk_CY46R1_CAMSfixes - BIT IDENTICAL

CAMS 46r1 bug fixes (IFS-732)

There are a few small bug fixes to 46r1 required for CAMS, *all of which are bit-identical for NWP* purposes.

ifs −source:

- ifs /phys_ec/ aer_src .F90, ifs /chem/compo_diurnal.F90: stronger diurnal cycle for SOA emissions to prevent excessive night-time peaks *(Samuel)*

- ifs/module/yoeaersrc.F90, ifs/glomap_mode/aer_dust.F90: remove duplicate config variable that may be used uninitialised *(Zak)*
- ifs/module/parfpos.F90: increment JPOSSCVA (hard-coded limit on "extra" GFL fields) so that chemistry diagnostics work properly *(Johannes)*
- ifs/module/varbc_to3.F90: correct VarBC settings for Sentinel-5p/TROPOMI CO *(Antje)*
- ifs/phys_ec/aer_phy3.F90: use correct pressure variable in diagnostic *(Zak)*
- ifs/phys_ec/ climaer_layer .F90: correct array indices when using prognostic aerosol *(Zak)*
- ifs/phys_ec/culinox.F90: correct lightning NOx production rate *(Johannes)*
- ifs/phys_ec/uvradi.F90: correct test for prognostic aerosol being in use *(Zak)*
- ifs/phys_ec/ su_aer_climatology3d .F90: allow longer filename to prevent spurious failures *(Zak)*
- satrad/programs/ bufr_screen_reo3_superob .F90: allow longer filename to prevent spurious failures *(Antje)*

ifs − scripts:

- bufr2odb: update resat/resatak paths for continuous DA changes *(Antje)*
- fetchobs, prereo3_superob: fixes to Sentinel-5p/TROPOMI observations *(Antje)*
- get_gems_surface, prep_flux: allow use of CAMS_GLOB[_NRT] emissions *(Zak)*
- get_gems_surface: correction to SOA emission cap *(Samuel)*
- premwimg: test LMACC rather than LCHEM to determine if in "CAMS mode" *(Zak)*
- ifstraj : pass LAERSCAV and LAERSCAV_CHEM as in model script *(Zak)*
- model: set NVEXTR correctly when LCHEM_DIA is used with AERO_SCHEME=glomap *(Zak)*
- aero_setup: default LAERSCAV consistently with LAERSCAV_CHEM from prepIFS *(Zak)*

ifs − suites:

- fc: in "CAMS (cycling-forecast) mode" don't let "clean" task remove data from the FDB until the next "getfcdata" has finished with it *(Zak)*

ifs − defaults:

- fc/macc.xml: enable setting LAERSCAV_CHEM without using "add your own variables".*(Zak)*

its − test:

- tests/t21/ test_ */ postprocessing: enable optional bit-identicality testing in those tests where it was missing *(Zak)*

Zak Kipling, Anna Agusti-Panareda - cxzk_CY46R1_CAMSfixes - BIT IDENTICAL

BFAS scripts fail when a pre-built IFS bundle is used (IFS-747)

If an experiment is run using a pre-compiled IFS bundle module, then $BINS is pointed to somewhere in /usr/local (which is, of course, not writable).

The logic in get_bfas_factors which copies Python scripts etc. into $BINS thus needs updating to put them in $MYBINS instead (which is always within the experiment's FWS).

(In the longer term, of course, this whole mechanism need revisiting to make the BFAS scripts suitable for operational use.)

Anna Agusti-Panareda, Jerome Barre, Zak Kipling - paf_CY46R1_CAMS81emis - BIT IDENTICAL

Change of CAMS GHG emission files and clean up of GHG emission script (IFS-749)

This changes are to incorporate the new emission inventories for CO2 and CH4 provided by CAMS81, new ocean CO2 fluxes from Jena and revised BFAS tables.

Atmosphere - Dynamics

- Application of multiple grid IFS-Atlas capability to tracer transport (IFS-365)
- Implement coupling between continuity equation and physics (IFS-344)
- Some upgrades to double precision in model setup (IFS-511)
- Trans library no longer works with combination "LDUSEFLT=.FALSE." and "LDUSERPNM=.FALSE." (IFS-375)

Sylvie Malardel, Peter Bechtold - nas_CY45R1_LPHYCTY_v2 - BIT IDENTICAL

Implement coupling between continuity equation and physics (IFS-344)

This branch contains modifications which allow the coupling between the physics parametrisations and the continuity equation of the IFS.

A new GFL (PHYCTY) has been introduced to store mass tendencies produced inside the physics at a given time step. These mass tendencies are then used at the next time step to update the 3D continuity equation (routine GPCTY), i.e. in practice, omega, eta_dot and hydrostatic surface pressure.

Currently, this mechanism can be used to:

- inject total water tendencies into the total mass continuity equation of the IFS in order for the system to conserve dry mass. A new switch (NAMDYN) corresponding to this option is LNODRYFLX (=F is the default which correspond to the current operational system).
- delagate the compensating subsidence originally accounted for in the convection scheme to the dynamics. A new variable RMFADVW (NAMCUMF) has been created. If RMFADVW=0, the compensating subsidences are computed in the convection scheme. If RMFADVW=1, they are completely delegated to the dynamics. For any value between 0 and 1, the job is shared between physics and dynamics. An separate variable, RMFADVWDD can be used to delegate the compensating ascent associated with the downdrafts.

If ,LNODRYFLX=T or RMFADVW=/0, the new GFL GPCTY need to be activated in namelist (YPHYCTY_NL%%LGP=true in NAMGFL).

The content of PHYCTY is also known by fullpos, both for the diagnostic computation of the continuity related variables (omega, eta_dot) and for output (there is not yet a dedicated grib code for PHYCTY, an existing grid code has to be borrowed and setup in namelist, for example: YPHYCTY_NL%%IGRBCODE=241).

Files modified (IFS): `cpg_gp.F90 cpqtuv.F90 gpcty.F90 gpmktend.F90 cormassdry.F90 cnt4.F90 gmassdiag.F90 vpos_prep.F90 type_gflflds.F90 yoecumf.F90 yom_ygfl.F90 yomafn.F90 yomdyn.F90 yomphyder.F90 namcumf.nam.h namdyn.nam.h namgfl.nam.h ec_phys_drv_oops.F90 callpar.F90 cloudsc.F90 cubasen.F90 cucalln.F90 cuctracer.F90 cudtdqn.F90 cududv.F90 cuflxn.F90 cuinin.F90 cumastrn.F90 cumastrn2.F90 cumastrn2ad.F ec_phys.F90 ec_phys_drv.F90 ec_phys_tl.F90 local_state_ini.F90 noconvection.F90 state_copy.F90 state_increment.F90 sucumf.F90 suphec.F90 pos.F90 pos_prepgfl.F90 suafn1.F90 suafn2.F90 suafn3.F90 sudefo_gflattr.F90 sudyn.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90`

Willem Deconinck, Michail Diamantakis - nawd_CY45R2_mgrids - BIT IDENTICAL

Application of multiple grid IFS-Atlas capability to tracer transport (IFS-365)

The Atlas software system has been part of the IFS since cycle 41r2. It allows mesh generation and more recently supports parallel interpolation from one mesh to another. This feature can be exploited to simulate different processes on different grids i.e. grids with different resolution. In this branch the multiple grid technique is implemented for tracer transport. The MPDATA mass conserving scheme from the FVM dynamical core is imported into IFS as well as a semi-Lagrangian option. Both methods have been coded using Atlas flexible data structures (previously developed as ESCAPE dwarfs). Beyond technical aspects, a key element of this work is to enable the MPDATA advection scheme which assumes "fixed" height levels and a continuity equation based on density to work on the "moving" pressure based vertical coordinate of IFS which does not use density as a mass variable but pressure. The current implementation of the MPDATA algorithm is preliminary and has been tested successfully on different resolutions up to tco639 with 137 levels. In a future release we aim to finalise this work by re-formulating the scheme using an eta vertical coordinate system as the one used by IFS. We also aim to improve the efficiency of the code by implementing a flux-form semi-Lagrangian in the vertical which allows longer timesteps and by porting code optimizations.

Files modified (ATLAS_APPS): `CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_module.F90`

Files modified (BL): `dynamic_symbols.c`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake dummy.cmake ifs.cmake ifsaux.cmake oopsifs.cmake prepdata.cmake satrad.cmake target_ignore_missing_symbols.cmake trans.cmake`

Files modified (FIELDMAN): `FieldSet.hpp`

Files modified (IFS): `cpg.F90 cpg_drv.F90 cpg_dyn.F90 lapineb.F90 larcinb.F90 spcsi.F90 cnt0.F90 gp_model.F90 fpgpnorm.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_mpdata_module.F90 mgrids_sladv_module.F90 plev_hlev_module.F90 fields_base_mod.F90 fields_mod.F90 gfl_subs_mod.F90 model_dynamics_mod.F90 type_geometry.F90 type_model.F90 type_spgeom.F90 yom_ygfl.F90 yomatlas.F90 yomcst.F90 namdyncore.nam.h cpg_drv_oops.F90 gp_model_oops.F90 stepo_oops.F90 sltend.F90 su0yomb.F90 suatlas_mesh.F90 sucst.F90 sudefo_gflattr.F90 sudyn.F90 sugeometry.F90 sugfl2.F90 sugfl3.F90`

Files modified (IFSAUX): `i_system.c ec_mpi_finalize.intfb.h lfi_altm.c mpl_end_mod.F90 abor1.F90 drhook.c env.c ifssig.c ec_meminfo.F90`

Files modified (IFSOBS): `CMakeLists.txt hdf5_file_mod.F90`

Files modified (ODB): `CMakeLists.txt cma_open.c odb_target_ignore_missing_symbols.cmake`

cmaio.h codb.c twindow.c

Files modified (OOPSIFS): CMakeLists.txt

Files modified (PREPDATA): chgrib.c

Files modified (TRANS): dealloc_resol_mod.F90

Peter Dueben - rdpd_CY45R1_SP_submit - BIT IDENTICAL

Trans library no longer works with combination "LDUSEFLT=.FALSE." and "LDUSERPNM=.FALSE." (IFS-375)

Since MeteoFrance contributions got merged with CY43R3, the combination

```
LDUSEFLT=.FALSE.     ( Fast Legendre transforms OFF )
LDUSERPNM=.FALSE.    ( Belusov algorithm OFF )
```

is broken. Many if-statements have been created in suleg_mod that break this combination. This may be related to the introduction of files

```
trans/external/trans_pnm.F90
trans/interface/trans_pnm.h
```

which could compute the legendre polynomials on the fly. Rather than having a new logical, it seems that someone at MF thought the above combination could be used instead.

Files modified (ALGOR): minv_8.F90 sgemmx.F dilatation_mod.F90 interpol_decomp_-mod.F90 seefmm_mix.F90

Files modified (ENKF): state_geometry.F90

Files modified (IFS): call_sl.F90 cpedia.F90 gpxx.F90 larche.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 fpgpnorm.F90 preset_grib_template.F90 spnormb.F90 cpfpfilter.F90 hpos.F90 openfpfa.F90 sufpg2.F90 sufpoph.F90 sumpfpos.F90 vpos.F90 fcvdfs.func.h lascaw.F90 lascawad.F90 lascawtl.F90 rdscaw.F90 suhslmer.F90 suvsplip.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_-mix.F90 larche_hlp.F90 surface_fields_mix.F90 yoesrtab.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcsgeom.F90 yomhslmer.F90 yommwave.F90 yomppc.F90 yomprad.F90 yomsekf.F90 yomvert.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 apl_arome.F90 aer_clcld.F90 aer_climg.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_-aerp.F90 suvdfs.F90 vdfexcu.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radact.F90 radiation_scheme.F90 radintg.F90 suecrad.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 ppintp.F90 ppsta.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sucst.F90 sugem2.F90 sugfl1.F90 sugfl2.F90 suhdf_ec.F90 sulega.F90 sunhbmat.F90 sunhsi.F90 supp.F90 susi.F90 susta.F90 suvert.F90 suvertfe1.F90 suvertfe3.F90 suvertfe3d.F90 suvv1.F90

legtri.F90 dealsc2.F90 dverint.F90 interp_gp.F90 updtim.F90 verint.F90 write_-
wavelet_initcv_grib.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90
pregprh.F90 sujbwavelet_stdevs.F90 sujbwavtrans.F90

Files modified (IFSAUX): deallocate_if_associated_mod.F90 transforms4py.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
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TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
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AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
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ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
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GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
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ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
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dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
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gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
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tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
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jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
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greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90

varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (PREPDATA): svsp2gp.F90 svgg.F90 Wavelet_Filter_IBM.F90 genlatmu.F90 getclimo3.F90 restbl.F90 sptogp.F90 unbal_eda.F90 vod2uv.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (SCMEC): trans_inq.F90 trans_inq.h

Files modified (SURF): fcsvdfs.h cce-optS.cfg gnu-optS.cfg flake_driver_mod.F90 flakeene_-mod.F90 flakerad_mod.F90 sppcfl_mod.F90 sppgust_mod.F90 surftstp_ctl_mod.F90 susflake_mod.F90 suvexcs_mod.F90 vexcs_mod.F90 vupdz0_mod.F90 yos_flake.F90 suvdfs.F90 fcvdfs.h

Files modified (TRANS): trans_inq.F90 trans_inq.h suleg_mod.F90 tpm_fields.F90 rgrid.F90

Files modified (WAM): altas.F90 init_x0tauhf.F outgrid.F readpre.F updatewd.F wamassi.F wamodel.F wavemdl.F wgrib2fdb.F wgribenout.F wgribout.F yownemop.F

Peter Dueben - rdpd_CY45R1_fix_extfpnorm - BIT IDENTICAL

Some upgrades to double precision in model setup (IFS-511)

Please only merge the one commit: [316b977a74b|https://software.ecmwf.int/stash/users/rdpd/repos/ifs-source/commits/316b97

https://software.ecmwf.int/stash/users/rdpd/repos/ifs-source/commits/316b977a74b9ab861d9416098aa4ec4eb63eaaf8

Files modified (ALGOR): minv_8.F90 sgemmx.F dilatation_mod.F90 interpol_decomp_-mod.F90 random_numbers_mix.F90 seefmm_mix.F90

Files modified (ENKF): state_geometry.F90

Files modified (IFS): call_sl.F90 cpedia.F90 gpxx.F90 larche.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 extfpnorm.F90 fpgpnorm.F90 preset_-grib_template.F90 spnormb.F90 cpfpfilter.F90 hpos.F90 openfpfa.F90 sufpg2.F90 sufpoph.F90 sumpfpos.F90 vpos.F90 fcvdfs.func.h lascaw.F90 lascawad.F90 lascawtl.F90 rdscaw.F90 suhslmer.F90 suvsplip.F90 field_definitions.F90 fields_mod.F90 grib_-utils_mod.F90 iostream_mix.F90 larche_hlp.F90 surface_fields_mix.F90 yom_-grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcsgeom.F90 yomhslmer.F90 yommwave.F90 yomppc.F90 yomprad.F90 yomsekf.F90 yomvert.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 apl_arome.F90 aer_clcld.F90 aer_climg.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_-main.F90 postphy_layer.F90 su_aerp.F90 suvdfs.F90 vdfexcu.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radact.F90 radiation_scheme.F90 radintg.F90 suecrad.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 ppintp.F90 ppsta.F90 sekf_-geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sucst.F90 sugem2.F90 sugfl1.F90 sugfl2.F90 suhdf_ec.F90

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Files modified (IFSAUX): deallocate_if_associated_mod.F90 transforms4py.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
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CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
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TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
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AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
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metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
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tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
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inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
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greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-

it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (PREPDATA): svsp2gp.F90 svgg.F90 Wavelet_Filter_IBM.F90 genlatmu.F90 getclimo3.F90 restbl.F90 sptogp.F90 unbal_eda.F90 vod2uv.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (SCMEC): trans_inq.F90 trans_inq.h

Files modified (SURF): fcsvdfs.h cce-optS.cfg gnu-optS.cfg flake_driver_mod.F90 flakeene_-mod.F90 flakerad_mod.F90 sppcfl_mod.F90 sppgust_mod.F90 surftstp_ctl_mod.F90 susflake_mod.F90 suvexcs_mod.F90 vexcs_mod.F90 vupdz0_mod.F90 yos_flake.F90 suvdfs.F90 fcvdfs.h

Files modified (TRANS): trans_inq.F90 trans_inq.h suleg_mod.F90 tpm_fields.F90 rgrid.F90

Files modified (WAM): altas.F90 init_x0tauhf.F outgrid.F readpre.F updatewd.F wamassi.F wamodel.F wavemdl.F wgrib2fdb.F wgribenout.F wgribout.F yownemop.F

Atmosphere - Physics

- AQUA planet fix and climplot chages (IFS-317)
- Activate safe ozone chemistry (IFS-551)
- Longwave scattering plus optimizations and improvements (IFS-174)
- New representation of sub-grid heterogeneity of cloud condensate for radiation and microphysics (IFS-281)
- Snow Multi-Layer + Warm start (passive) (IFS-323)
- Update of O3 saftey option (IFS-350) (IFS-502)
- fixing some issues with the 2T representation for the wet skin tile (IFS-441)
- separate variable for diagnostic CAPE to correctly compute MXCAPE6 (IFS-621)
- small convection improvements, technical: enabling subsidence to be taken off convection, preparations for TKE (IFS-318)

Robin Hogan - parr_CY45R1_ecrad_upgrade - METEOROLOGICAL

Longwave scattering plus optimizations and improvements (IFS-174)

This change upgrades the ecRad radiation scheme to version 1.0.9 and changes some of the default settings. The non-bit-reproducible changes are:

- Longwave scattering turned on for cloud particles (not aerosols), plus some optimization of the calculation of the longwave reflection/transmission coeffs.

- Longstanding bug in longwave ice optics has been fixed; this change almost negates the meteorological impact of turning longwave scattering on.

- Shortwave delta-Eddington scaling is now applied to particles separately, rather than the particles plus gases. This has a negligible impact on global mean fluxes, but is physically more correct, and is also more efficient (the computation is applied once per band rather than once per g point). This means that the increase the cost of the radiation scheme alone due to turning on longwave scattering (+3.3%) is countered, so that the overall cost increase of radiation is only +1.5%.

- Call updrgas every model timestep rather than every radiation timestep, updating the solar irradiance. While the 11-13 year solar cycle changes negligibly in one radiation timestep, this change is necessary for the adjoint pass in OOPS where sometimes the reverse-in-time pass starts on a non-radiation timestep so the solar irradiance is several W m-2 different in the first radiation call.

The bit-reproducible changes are:

- Some code clean-up, e.g. add kind=jprb where missing for "real" declarations in radiation_thermodynamics.F90; renamed single-character variables in radiation_two_stream.F90 and elsewhere.

- SPARTACUS 3D solver now incorporates "encroachment" in the shortwave.

- The cloud-water PDF shape may be selected using the RADIATION namelist via string variable CLOUD_PDF_SHAPE_NAME which may be "Lognormal" or "Gamma" (Gamma is still the default).

Files modified (IFS): `call_sl.F90 cpedia.F90 postphy.F90 updclie.F90 updrgas.F90 ctxinitdb.F9 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 radiation_ifs_rrtm.F90 radiation_`

interface.F90 radiation_setup.F90 surface_fields_mix.F90 yoerad.F90 yom_grib_-
codes.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_-
setup.F90 naerad.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_-
thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_-
ml.F90 diag_clouds.F90 ec_phys.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90
vdfexcustl.F90 modify_wv_continuum.F90 radiation_scheme.F90 radintg.F90 srtm_-
init.F90 suecrad.F90 surdi15.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90
susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 supp.F90 dealsc2.F90
interp_gp.F90 updtim.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90

bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90 radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90 radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90 radiation_tripleclouds_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Maike Ahlgrimm, Maike Ahlgrimm, Richard Forbes, Robin Hogan - pag_CY45R1_debug - METEOROLOGICAL

New representation of sub-grid heterogeneity of cloud condensate for radiation and microphysics (IFS-281)

Passive: regime dependent FSD parameterization in cloud microphysics and radiation

Files modified (IFS): type_gflflds.F90 yoecldp.F90 yoephy.F90 yom_ygfl.F90 naephy.nam.h namcldp.nam.h namgfl.nam.h callpar.F90 cloud_layer.F90 cloudsc.F90 sucldp.F90 raddrv.F90 radiation_scheme.F90 radintg.F90 suecrad.F90 su0phy.F90 suctrl_-gflattr.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90

Files modified (RADIATION): radiation_config.F90

Peter Bechtold - pae_CY45R1_metview - BIT IDENTICAL

AQUA planet fix and climplot chages (IFS-317)

Improvements in climplot package, mainly concerning AQUA planet configuration

Bug correction in inter_fp to set Land-Sea mask to 0 for AQUA planet

Peter Bechtold, Philippe Lopez, Sylvie Malardel - pae_CY45R1_newconvbase_plus_TL_CUB_-SHMZF1_EVAPSRH - METEOROLOGICAL

small convection improvements, technical: enabling subsidence to be taken off convection, preparations for TKE (IFS-318)

The branch is mainly technical, but contains in cubasen.F90, cuflxn.F90 and cumastrn.F90 meteorological modifications that generally improve the lower atmospheric boundary-layer, the drawback is a slight degradation in 850 hPa scores.

reduced maximum deep parcel perturbations in lowest level, recompute T,q in test parcel if negative buoyancy, assure positive values in division for closure, increased entrainment in shallow momentum, increased evaporation in shallow by making area fraction RHumidity dependent

These modifications are made consistently in the non-linear model as well as in the linear model and TL/AD by Philippe Lopez

The Meteorological impact is consistently positive in the lower levels, especially RH and low-level winds in the tropics (2-5% improvement), winter scores generally slightly improved thanks to reduced convection over the West Pacific warm pool, results are neutral in summer. Also importantly, drizzle from shallow convection is reduced

Note: this branch overlaps with the bit-identical technical parts in convection with Sylvie's branch to be submitted

The branch further includes numerous technical preparations:

- enable taking out convective subsidence (to be done by dynamics)
- all technical setups at callpar.F90 level to enable using TKE as GFL field in EC physics

Gabriele Arduini, Emanuel Dutra, Gianpaolo Balsamo, Souhail Boussetta - paga_CY45R1_-snowML/paga_CY45R1_snowML_an - BIT IDENTICAL

Snow Multi-Layer + Warm start (passive) (IFS-323)

Branches:

source branch: paga_CY45R1_snowML script branch: paga_CY45R1_snowML_an branches based on rdx_-CY45R1_esuite_20180312

Plumbing of snow multi-layer model into the IFS, which will remain passive in 46R1. Tests already performed in 43R3 shows that these modifications are bit-identical.

Adding a "warm start" routine for the variables of the snow multi-layer model (density, temperature, liquid water). The routine initializes these fields using the informations from the single-layer output of the IFS, thereby reducing the spin-up time required for the snow variables.

Files modified (IFS): `call_sl.F90 cpedia.F90 cpg.F90 cpg_drv.F90 cpg_gp.F90 lattex.F90 postphy.F90 caprsurf.F90 casmswi.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updcli.F90 updclie.F90 updcpl.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 cprep1.F90 csekf2.F90 scan2m.F90 scan2mtl.F90 cpclimi.F90 hpos.F90`

phymfpos.F90 pregpfpos.F90 scan2m_hpos.F90 vpos.F90 field_definitions.F90 field_-
gfl_wrapper.F90 fields_base_mod.F90 fields_mod.F90 grib_utils_mod.F90 iogrida_-
mod.F90 iostream_mix.F90 surface_fields_mix.F90 yoephy.F90 yom_grib_codes.F90
yom_ygfl.F90 yomafn.F90 yommwave.F90 yomphyder.F90 yomppc.F90 yomsekf.F90 mwave_-
emis.F90 mwave_setup.F90 naephy.nam.h namdphy.nam.h namsekf.nam.h black.F90
defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 cpg_-
drv_oops.F90 ec_phys_drv_ad_oops.F90 ec_phys_drv_oops.F90 ec_phys_drv_tl_-
oops.F90 error_covariance_3d_mod.F90 scan2m_oops.F90 scan2mtl_oops.F90 departure_-
jo.F90 hinth.F90 radtr_ml.F90 aer_phy3_layer.F90 aerini_layer.F90 callpar.F90
callparad.F90 callpartl.F90 chem_main_layer.F90 climaer_layer.F90 cpspe.F90
cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_-
phys.F90 ec_phys_ad.F90 ec_phys_drv.F90 ec_phys_drv_ad.F90 ec_phys_drv_tl.F90
ec_phys_tl.F90 ghg_main.F90 local_arrays_ini.F90 phys_arrays_ini.F90 postphy_-
layer.F90 store_traj_phys_layer.F90 su_aerp.F90 surfbc_layer.F90 surfrad_-
layer.F90 surftstp_layer.F90 surftstp_s_layer.F90 surfws_layer.F90 turbulence_-
layer.F90 turbulence_s_layer.F90 vdfdifh.F90 vdfexcusad.F90 vdfexcustl.F90
vdfmain.F90 vdfouter.F90 radcfg.F90 raddrv.F90 radiation_scheme.F90 radpar.F90
swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90
sm_ekf_main.F90 susekf.F90 gp_sstaqua.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90
suafn3.F90 sudimf1.F90 sugfl1.F90 sugfl2.F90 sugridf.F90 sugridg.F90 supp.F90
dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 cvar2in.F90
cvar2inad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90
vec2gp.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h

ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
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mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-

def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90 tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90 extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90 nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (SURF): surfws.F90 surfws.h osm.cfg srfsn_driver_mod.F90 srfsn_regrid_mod.F90 srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 vlamsk_mod.F90 callpar1s.F90 cpg1s.F90 rdsupr.F90 sugp1s.F90 suphec.F90 vdfdifh1s.F90 vdfmain1s.F90 yoephy.F90 mpl_mod_ctl.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Irina Sandu, Gianpaolo Balsamo, Souhail Boussetta - pa3_CY45R1_esuite_2Tdiag_WetSkin - METEOROLOGICAL

fixing some issues with the 2T representation for the wet skin tile (IFS-441)

This is a combination of

- pa1_CY45R1_WetSkin branch, described in IFS-410, which increases the skin conductivity for the wet-skin tile in order to diminish the number of instabilities creating occasional spikes in 2T
- pa3_CY45R1_esuite_2Tdiag - which contains a small fix for the 2T diagnostic for the wet skin and lakes tiles (this branch is bit identical , exp gx7p bit id with gx7s for ex)
- changes are on top of rdx_CY45R1_esuite_20180312

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90

grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90
yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90
mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90
pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90
chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90
cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_-
aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90
swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90
susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90
supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F
jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
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ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
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bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
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sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
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coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
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metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
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iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
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mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
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sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
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obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
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tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh

greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (SURF): surfexcdriver_ctl_mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_-mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_ctl_mod.F90 vlamsk_mod.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Irina Sandu, Cornel Soci - naj_CY45R1_safe_ozone - BIT IDENTICAL

Update of O3 saftey option (IFS-350) (IFS-502)

Update of parameters to used in O3 safety option (LO3CH_SAFE)

- limit relaxation time scale (A3) up to 1 day
- linear in pressure interpolation from 10 hPa to model top.

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_-obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yoephy.F90 yom_-grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 naephy.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_-main.F90 o3chem.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_-layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0phy.F90 su_-surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.

```
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
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AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
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GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
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ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
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sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
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greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Elias Holm, Cornel Soci, Johannes Flemming - dae_CY45R1_SAFE_OZONE - METEOROLOGICAL

Activate safe ozone chemistry (IFS-551)

Turn on the improved safe ozone chemistry in model and ifstraj by setting LO3CH_SAFE=T in namelist NAEPHY.

This change can be included either with the active physics or active satellite contributions.

Irina Sandu, Ivan Tsonevsky, Timothy Hewson - pae_CY45R1_ZCAPEcorr - BIT IDENTICAL

separate variable for diagnostic CAPE to correctly compute MXCAPE6 (IFS-621)

As we had only one cAPE variable PDIAG%PCAPE the CAPE value in callpar.F90 computed by the convection routine every time step was overwritten every hour by the diagnostic (archived) CAPE routine CUANCAPE2. This not only caused in past difficulties when using CAPE in other computations like wind gust and lightning (those had to be called before CUANCAPE2) but also resulted in the new diagnostic output MXCAPE6 != MAX(CAPE_archive,6h) as it mixes two different ways of computing CAPE.

The solution was to introduce two CAPE variables, leave PDIAG%PCAPE for rest of physics and add PDIAG%ZCAPE for call of CUANCAPE2 and POSTPHY

Files modified (IFS): `yomphyder.F90 callpar.F90 phys_arrays_fin.F90 phys_arrays_ini.F90 postphy_layer.F90`

Documentation

- New climatology for probability of temperature anomalies (IFS-622)

John Hodkinson - [No branch] - BIT IDENTICAL

New climatology for probability of temperature anomalies (IFS-622)

Climatology for the computation of probabilities of temperature anomaly greater than +4K, greater than +8K, less than -4K and less than -8K as well as temperature anomaly less than -2K and of at least +2K will be updated. At the moment, fixed outdated climatology is used. The new climatology will be based on re-forecasts (model climatology). This change will make these products up-to-date with what is used for other products such as the EFI, extended-range forecast anomalies and some new products such as probabilities of temperature anomalies above/below certain standard deviation thresholds.

Shell scripts (t850 tasks) will be changed by FD. Documentation should provide a description of the change to make users aware of the updated climatology.

[No branch]

Land Surface

- Bug fix rain refreeze over snow (IFS-450)
- Coupled Processes Team contributions to CY46R1 (IFS-319)
- Wet tile skin conductivity adjustment (IFS-410)

Tomas Wilhelmsson, Gabriele Arduini, Kristian Mogensen, Peter Janssen - wab_CY45R2_for_-CY46R1_CP_contributions_V3 - METEOROLOGICAL

Coupled Processes Team contributions to CY46R1 (IFS-319)

Contributions from the wave model with impact on the meteorology:

5 New wave physics based on adaptation of Ardhuin et al. 2010.

6 This change "New method to compute the momentum and energy fluxes that are passed to the NEMO" has been switched off from the contributions to CY46R1 (i.e. the switch WAM_LWVFLX_SNL in prepIFS set to false)

7 Activation of the impact of surface ocean currents on the wave propagation when surface currents are available from NEMO.

8 Fix to insure proper bottom induced wave breaking in very shallow water.

9 Minor corrections to the mean bathymetry, minimum depth changed from 2 to 3m.

Contributions with no impact on the meteorology

10 main code moved to FORTRAN 90.

11 Revised freak wave parameters to account for shallow water effects.

12 Second order correction applied to all wave output parameters that depend on a spectral moment.

13 IO server capabilities (more testing still needed), see

https://software.ecmwf.int/issues/browse/IFS-279

Change to NEMO: Updates to NEMO V3.6 code as part of ongoing development for future upgrade of NEMO model version. Fortran code to implement a source code partial coupling scheme for the future. Limited set of ocean output in GRIB on the atmospheric grid. see https://software.ecmwf.int/issues/browse/IFS-334

Bug fix rain refreeze over snow A bug in the computation of the amount of rain that could freeze when intercepted by the snow-pack was corrected. See https://software.ecmwf.int/issues/browse/IFS-450

Files modified (CMAKE): `enkf.cmake ifs.cmake odbport.cmake prepdata.cmake ssa.cmake wam.cmake`

Files modified (IFS): `cpedia.F90 updclie.F90 updnemoocean.F90 cnt4.F90 cprep3.F90 reresf.F90 fpgpnorm.F90 wrfld_fp.F90 wrgridall_map.F90 wrspeca_map.F90 fp_serv_sync.F90 hpos.F90 wrhfp.F90 wrmlfp.F90 wrmlfp_io_serv.F90 wrplfp_io_serv.F90 io_serv_free_req.F90 io_serv_get_req.F90 io_serv_get_req_ready.F90 io_serv_get_reqid.F90 io_serv_grok_nproc.F90 io_serv_hdr1_init.F90 io_serv_hdr2_init.F90 io_serv_inc.F90 io_serv_make_chunks.F90 io_serv_map_recv_part1.F90 io_serv_map_recv_part2.F90 io_serv_map_send_part1.F90 io_serv_map_send_part2.F90 io_serv_prepacka1_compress.F90 io_serv_read_send.F90 io_serv_reclaim_buf_space.F90 io_serv_recv_cleanup.F90 io_serv_recv_req.F90 io_serv_recv_sort.F90 io_serv_recv_term.F90 io_serv_req_done.F90 io_serv_run_ec.F90 io_serv_send_dist.F90 io_serv_send_read.F90 io_serv_send_sort.F90 io_serv_setup_fa.F90 io_serv_suiosctmpl.F90 io_serv_sync.F90 io_serv_wrgp2fa_compress.F90 io_serv_write.F90 io_serv_write_ec.F90 io_serv_writefld_ec.F90 io_serv_wrspeca_compress.F90 iofldesc_mod.F90 iogride_mod.F90 iogridoe_mod.F90 surface_fields_mix.F90 yoephy.F90 yoewcou.F90 yom_grib_codes.F90 yomafn.F90 yomcosjo.F90 yomio_serv.F90 yomio_serv_hdr.F90 yomio_serv_req.F90 yommcc.F90 naephy.nam.h nammcc.nam.h getnemodiag.F90 getnemodiag3d.F90 ininemo.F90 ec_phys.F90 postphy_layer.F90 wv_io_serv_rec.F90 wv_io_serv_suiosctmpl.F90 wv_wgribencode_io_serv.F90 wvcouple.F90 wvcouple_init_early.F90 wvcouple_update_grib_handles.F90 wvxf2gb.F90 master.F90 su0phy.F90 su0yomb.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugridua_map_part1.F90 sumcc.F90 suspeca_map_part1.F90 readmask.F90 wrresf.F90`

Files modified (NEMO): `diahth.F90 zdfmxl.F90 arch-IBM_EKMAN_INGV.fcm namelist_cfg CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90 diaar5.F90 diacfl.F90 diadct.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90 dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90 cla.F90 lbclnk.F90 lib_mpp.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90 sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90 sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90 traldf.F90 tranxt.F90 trazdf.F90 trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90 zdftmx.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90 par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_cfc.F90 trcini_cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_trc.F90 trcnam_my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90 p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90 trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort_athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90 compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90 create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md 5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90`

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ecsstbufrdata.F90 Makefile config gribdcoast.F90 griblsm.F90 griblsmwam.F90
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10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh plot_-
sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
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areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
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wam_sorti.F90 wam_sortini.F90 wam_syminv.F wam_syminv.F90 wam_u2l1cr.F wam_-
u2l1cr.F90 wam_user_clock.F wam_user_clock.F90 wamadszidl.F wamadszidl.F90
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yowcard.F yowcard.F90 yowchecksmodule.F90 yowcinp.F yowcinp.F90 yowcoer.F yowcoer.F90
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Peter Bechtold - pa1_CY45R1_WetSkin/pa1_CY45R1_wetSkinOpt3 - METEOROLOGICAL

Wet tile skin conductivity adjustment (IFS-410)

This branch is meant to fix the 2m maximum temperature spikes that were related to the oscillations in the skin temperature. These oscillations were caused by the underestimation of the wet tile skin conductivity. more information could be found in the [USURF|https://software.ecmwf.int/wiki/display/EVAL/Meeting+%232+-+2+Feb+2018?preview=/85414781/95062236/T2max_issue_USURF02022018_Boussetta.pptx] page

A summary report on the performed experiments and the impact of this change can be found in the following link: [^T2max_Summary.pdf].

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake

compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
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bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
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bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
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cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
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tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-

vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (SURF): surfseb_ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_-
mod.F90 surfsebstl_ctl_mod.F90 vlamsk_mod.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Gabriele Arduini, Gianpaolo Balsamo, Souhail Boussetta - [No branch] - METEOROLOGICAL

Bug fix rain refreeze over snow (IFS-450)

A bug in the computation of the amount of rain that could freeze when intercepted by the snowpack was found

after the daily report:

[https://software.ecmwf.int/wiki/display/FDR/2017-11-30]

The bug was overestimating the amount of rain which could refreeze, therefore leading to spurious increase of snow depth with time.

[No branch]

Model Uncertainty

- 1 hourly radiation for ENS (IFS-513)
- Passive Model Uncertainty developments for 46R1 (IFS-336)
- Random number seed generation for single precision (IFS-594)

Sarah-Jane Lock, Martin Leutbecher, Peter Bechtold, Richard Forbes, Simon Lang - nes1_-CY45R1_MUfor46R1 - BIT IDENTICAL

Passive Model Uncertainty developments for 46R1 (IFS-336)

Developments for SPPT and SPP - all passive options (not active in operations) for future testing:

- computational efficiency: reduced frequency pattern updates (SPP/SPPT);
- additional and revised SPP perturbations

NOTE: this contribution will be pre-merged in a branch from Simon Lang (IFS ticket - to be confirmed)

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 stepo.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 spp_mod.F90 surface_fields_mix.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 yomspsdt.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h namspp.nam.h namspsdt.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cloudsc.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cududv.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 ini_spp.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 get_spp_conf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 suspsdt.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance`

TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
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bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
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sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
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Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Simon Lang, Robin Hogan - nesl_CY45R1_for46r1_modelunc_1hrad - METEOROLOGICAL

1 hourly radiation for ENS (IFS-513)

go from 3 hourly radiation to 1 hourly radiation in ENS

Peter Dueben, Martin Leutbecher, Simon Lang - rdpd_CY45R2_SP_pattern_fix_v5 - BIT IDENTICAL

Random number seed generation for single precision (IFS-594)

Fix issue with seed generation that happens when using single precision and activating SPPT.

Tomas W asked whether a solution could be provided by 26 October 2018.

Files modified (AEOLUS): `arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_l2bp_primary_ec.F90`

Files modified (ALGOR): `minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_caller.h m1qn3a.F90`

Files modified (ATLAS_APPS): `CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_args_module.F90 dwarf_command_module.F90 dwarf_data_module.F90 dwarf_util_module.F90`

Files modified (BL): `dynamic_symbols.c mf_blacklist.b`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake prepdata.cmake satrad.cmake target_ignore_missing_symbols.cmake trans.cmake`

Files modified (DUMMY): `aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_horiz_flt.F suefpbip.F sueinfce.F`

Files modified (ENKF): `obs_base_mod.F90 obs_constants.F90`

Files modified (FIELDMAN): `FieldSet.hpp`

Files modified (IFS): `call_sl.F90 call_sl_ad.F90 call_sl_tl.F90 cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90 cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90 cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90 gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90 gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90 gnhqe_tndlagadiab_gw.F90 gnhqe_tndlagadiab_svd.F90 gnhqe_xxd.F90 gnhsvd2gw.F90 gnhx.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90 gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90`

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bascoetm5.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90
chem_n2o.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_diurnal.F90 mocage_-
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readvec.F90 savmini.F90 savmini2.F90 setjbhybacv.F90 setqccma.F90 setran.F90
sqrtb.F90 sqrtbad.F90 sqrtbin.F90 sqrtbinad.F90 suacv.F90 sualctv.F90 sualges.F90
suallr.F90 suallt.F90 suanebuf.F90 suecges.F90 suensmem.F90 suinep.F90 suineplap.F90
suinfce.F90 suinrenormfce.F90 suiomi.F90 sujb.F90 sujbbal.F90 sujbcor.F90 sujbcosu.F90
sujbdat.F90 sujbhybacv.F90 sujbstd.F90 sujbtest.F90 sujbvarens.F90 sujbwavelet.F90
sujbwavelet0.F90 sujbwavelet_stdevs.F90 sujbwavgen.F90 sujbwavgen_hybraw.F90
sujbwavrenorm.F90 sujbwavstats.F90 sujbwavvc.F90 sujbwavwri.F90 sumdfce.F90
sumoderr.F90 suprecov.F90 suprfep.F90 suqnorm.F90 surad.F90 surinc.F90 suscal.F90
suscal_jb.F90 suscal_norms.F90 suscat.F90 susepfce.F90 suseprenormfce.F90 sushfce.F90
suvar.F90 suvazx.F90 suvifce.F90 taskob.F90 taskob_thread.F90 taskobad.F90
taskobad_thread.F90 taskobtl.F90 taskobtl_thread.F90 tlprop.F90 tltest.F90
upspec.F90 varcalc.F90 varflt_crt.F90 varflt_trunc.F90 vec2gp.F90 wavxform.F90
wrchres.F90 writelct.F90 writeoba.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): i_system.c facgrm.F90 fadgra.F90 fagote.F90 faieno.h falgra.h

faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.h isrchfltpv.body.h
lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_mod.F90 mpl_allgatherv_-
mod.F90 mpl_comm_split_mod.F90 mpl_end_mod.F90 mpl_gatherv_mod.F90 rttov_-
const.F90 rttov_ec_mod.F90 yomlun_ifsaux.F90 faconvgrib.F90 abor1.F90 dr_-
hook_util.F90 drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 hdf_dbase_mod.F90
odb2_dbase_mod.F90 odbserver_dbase_mod.F90 CMakeLists.txt test_dbase_performance.F90
test_dbase_view.F90 test_overhead_odb2.F90 test_parallel_distribute.F90

Files modified (NEMO): diahth.F90 zdfmxl.F90 arch-IBM_EKMAN_INGV.fcm namelist_-
cfg CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref
namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_-
ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90
diaar5.F90 diacfl.F90 diadct.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90
cla.F90 lbclnk.F90 lib_mpp.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90
sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_-
clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90
sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90 traldf.F90 tranxt.F90 trazdf.F90
trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90
zdftmx.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90
par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_-
cfc.F90 trcini_cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_trc.F90 trcnam_-
my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90
p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90
trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort
athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90
compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90
create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam arch_configuration.cmake
arch_keys_Intel.cmake compiler_flags.cmake compiler_flags_Intel_CXX.cmake compiler_-
flags_Intel_Fortran.cmake compiler_flags_PGI_Fortran.cmake tools_configuration.cmake
tools_keys_Intel.cmake fcmcmake.ksh fcmcsmake.ksh fcmnmake.ksh fcmsmake.ksh
fcmxiosmake.ksh CMakeLists.txt nemogcmcoup_exflds_get.F90 nemogcmcoup_lim2_-
update.F90 nemogcmcoup_mlflds_get.F90 nemogcmcoup_mlinit.F90 nemohth.F90 griblsm.F90
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add.F90 nemogcmcoup_update_mpmd.F90 nemogcmcoup_wam_coupinit.F90 nemogcmcoup_-
wam_get.F90 nemogcmcoup_wam_update.F90 nemogcmcoup_wam_update_stress.F90 timing.F90
date_utils.F90 gribfluxes.F90 griblsm.F90 gribtools.F90 oceaninput.F90 toolspar_-
kind.F90 nemopseudo.F90 nemopseudompmd.F90 nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
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to_simocn_gauss_1pts_cca.ksh dists_atm_to_simocn_gauss_4pts_cca.ksh dists_-
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Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
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namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_io setup_namelist_xios setup_outer_data cdfmoc.f90 config.macports Makefile
config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90 config.cray
ecatmosbufrdata.F90 ecsstbufrdata.F90 Makefile config gribdcoast.F90 griblsm.F90
griblsmwam.F90 gribtools.F90 config.macports Makefile config griblsm.F90 gribthin.F90
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plot_10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh
plot_sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
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areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
netcdfinput.F90 omonadata.F90 omonatypes.F90 orca_grid.F90 spherepolygons.F90
toolspar_kind.F90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
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plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 config.macports config.macportsomp fbaddrename.
fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
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ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90 omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90 gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90 coords.F90 config.macports

Files modified (OBSTAT): obstat_def.F90 iniitemloc.F90 inisoftdef.F90 obstat_scat_plot.F90 plotsoft.F90 updsoft.F90 writegridstats.F90 writescat.F90 writesoft.F90

Files modified (ODB): CMakeLists.txt cma_open.c b2o_amend.F90 b2o_convert.F90 b2o_convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_atovs.F90 b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_gmi.F90 b2o_convert_grad.F90 b2o_convert_iasi.F90 b2o_convert_modisaer.F90 b2o_convert_msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_oscat.F90 b2o_convert_pilot.F90 b2o_convert_rain_rates.F90 b2o_convert_reo3.F90 b2o_convert_ssmis_1d.F90 b2o_convert_synop_land.F90 b2o_convert_tamdar.F90 b2o_convert_temp.F90 b2o_convert_temp_hires.F90 b2o_convert_windprofiler.F90 b2o_crc.c calc_azim.F90 get_varindex.F90 odb_target_ignore_missing_symbols.cmake sat_atovs_hyper.sql scat_ambig_select.sql sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_4.sql decis_robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h sat_atovs.sql sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h b2o_debug.h cmaio.h odb_assoc_cols.h odb_it_members.h calc_azim.h codb.c datastream.F90 twindow.c b2o_functional.F90 b2o_get.F90 b2o_utility.F90 varindex_module.F90 bator_datetime_mod.F90 bator_decodbufr_mod.F90 bator_decodgrib_mod.F90 bator_decodhdf5_mod.F90 bator_decodnetcdf_mod.F90 bator_ecritures_mod.F90 bator_impr_mod.F90 bator_init_mod.F90 bator_lectures_mod.F90 bator_module.F90 bator_rad_postproc_mod.F90 bator_saisies_mod.F90 bator_util_mod.F90 bator_namelist.nam.h ecma2ecmascr Bator.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90 FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface. IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 Logbook.interface.F90 LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90 ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90 ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.c ObsBiasIncrementVARBC.h ObsBiasIncrementVARBC.interface.F90 ObsBiasLListsTOVSCV.F90

ObsBiasLListsVARBC.F90 ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90 ObsBiasVARBC.cc ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsSpaceODB.cc ObsSpaceODB.h ObsSpaceODB.interface.F90 ObsVector.cc ObsVector.h ObsVector.interface.F90 StateIFS.cc StateIFS.h Trajectory.list.F90 VariablesIFS.interface.F90 ifs_init_wrapper.F90 instantiateObsAuxFactories.h instantiateObsErrorFactory.h instantiateObsOpFactories.h instantiateTlmFactory.h mpi_wrapper.F90 pm_link_mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): matutils.F90 chgrib.c fillgaussgrib.F90 unbal_eda.F90 wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90 radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90 radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90 radiation_tripleclouds_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): throw.h find_lsm.h get_lsm.h getcparam.h gaussgrid.F90 mod_camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_mie.F90 mod_mwatlas_m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_atlas.F90 mod_rttov_fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_test.F90 mod_screen_1c_bufrmsg.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90 rttov_chain.F90 rttov_coef_io_mod.F90 rttov_ec_settings.F90 rttov_fast_coef_utils_mod.F90 rttov_getoptions.F90 rttov_global.F90 rttov_hdf_chanprof_io.F90 rttov_hdf_coefs.F90 rttov_hdf_emissivity_io.F90 rttov_hdf_options_config_io.F90 rttov_hdf_options_rt_all_io.F90 rttov_hdf_options_rt_ir_io.F90 rttov_hdf_options_rt_mw_io.F90 rttov_hdf_profile_io.F90 rttov_hdf_profiles.F90 rttov_hdf_radiance_io.F90 rttov_hdf_reflectance_io.F90 rttov_hdf_rttov_coef_io.F90 rttov_hdf_rttov_coef_pcc_io.F90 rttov_htfrtc_interface_mod.F90 rttov_interface_mod.F90 rttov_lapack_mod.F90 rttov_math_mod.F90 rttov_scattering_mod.F90 rttov_solar_refl_mod.F90 rttov_tessem_mod.F90 rttov_test_k_mod.F90 rttov_test_mod.F90 rttov_types.F90 rttov_unix_env.F90 rttov_zutility.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_gmi_1d.F90 bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 create_aer_clim_prof.F90 example_aer_file_fwd.F90 example_aer_param_fwd.F90 example_cld_file_fwd.F90 example_cld_param_fwd.F90 example_fwd.F90 example_htfrtc_fwd.F90 example_k.F90 example_pc_fwd.F90 example_rttovscatt_fwd.F90 gensatim.F90 old_screen_1c.F90 rttov_aer_clim_prof.F90 rttov_bpr_calc.F90 rttov_bpr_init.F90 rttov_conv_coef.F90 rttov_scatt_make_coef.F90 rttov_test.F90 rttov_test_get_pc_predictindex.F90 rttov_us76_prof.F90 rttovscatt_test.F90 rttovscatt_test_one.F90 rtlimb_hat.F90 rtlimb_hat_ad.F90 rtlimb_

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coefs.F90 rttov_read_coefs_htfrtc.F90 rttov_write_ascii_coef.F90 rttov_write_-
ascii_mfasis_file.F90 rttov_write_ascii_pccoef.F90 rttov_write_ascii_scaercoef.F90
rttov_write_ascii_sccldcoef.F90 rttov_write_binary_mfasis_file.F90 rttov_-
write_binary_pccoef.F90 rttov_write_binary_scaercoef.F90 rttov_write_binary_-
sccldcoef.F90 rttov_write_coefs.F90 rttov_hdf_load.F90 rttov_hdf_save.F90 co2cld.F90
getcparam.F90 phrtsetup.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90
rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_setopts.F90 rttov_ec_-
tl.F90 rttvi.F90 rttov_ad.F90 rttov_add_aux_prof.F90 rttov_add_opt_param.F90
rttov_add_prof.F90 rttov_alloc_ad.F90 rttov_alloc_aux_prof.F90 rttov_alloc_-
auxrad.F90 rttov_alloc_direct.F90 rttov_alloc_ircld.F90 rttov_alloc_k.F90 rttov_-
alloc_mfasis_refl.F90 rttov_alloc_opt_param.F90 rttov_alloc_predictor.F90 rttov_-
alloc_prof.F90 rttov_alloc_prof_internal.F90 rttov_alloc_profiles_dom.F90 rttov_-
alloc_rad.F90 rttov_alloc_raytracing.F90 rttov_alloc_sunglint.F90 rttov_alloc_-
tl.F90 rttov_alloc_traj.F90 rttov_alloc_traj_dyn.F90 rttov_alloc_traj_sta.F90
rttov_alloc_trans_scatt_ir.F90 rttov_alloc_transmission_aux.F90 rttov_apply_-
pc_aer_reg_lims.F90 rttov_apply_pc_aer_reg_lims_ad.F90 rttov_apply_pc_aer_-
reg_lims_k.F90 rttov_apply_pc_aer_reg_lims_tl.F90 rttov_apply_reg_limits.F90
rttov_apply_reg_limits_ad.F90 rttov_apply_reg_limits_k.F90 rttov_apply_reg_-
limits_tl.F90 rttov_baran2014_calc_optpar.F90 rttov_baran2014_calc_optpar_-
ad.F90 rttov_baran2014_calc_optpar_tl.F90 rttov_calcbt.F90 rttov_calcbt_ad.F90
rttov_calcbt_tl.F90 rttov_calcemis_ir.F90 rttov_calcemis_ir_ad.F90 rttov_-
calcemis_ir_k.F90 rttov_calcemis_ir_tl.F90 rttov_calcemis_mw_ad.F90 rttov_-
calcemis_mw_k.F90 rttov_calcemis_mw_tl.F90 rttov_calcrad.F90 rttov_calcrad_-
ad.F90 rttov_calcrad_k.F90 rttov_calcrad_tl.F90 rttov_calcsatrefl.F90 rttov_-
calcsurfrefl.F90 rttov_calcsurfrefl_ad.F90 rttov_calcsurfrefl_k.F90 rttov_-
calcsurfrefl_tl.F90 rttov_check_options.F90 rttov_checkinput.F90 rttov_cldstr.F90
rttov_cldstr_ad.F90 rttov_cldstr_k.F90 rttov_cldstr_tl.F90 rttov_copy_aux_-
prof.F90 rttov_copy_opt_param.F90 rttov_copy_pccomp.F90 rttov_copy_prof.F90
rttov_direct.F90 rttov_dom.F90 rttov_dom_ad.F90 rttov_dom_k.F90 rttov_dom_-
setup_profile.F90 rttov_dom_setup_profile_ad.F90 rttov_dom_setup_profile_-
k.F90 rttov_dom_setup_profile_tl.F90 rttov_dom_tl.F90 rttov_erfcx.F90 rttov_-
init_aux_prof.F90 rttov_init_ircld.F90 rttov_init_opt_param.F90 rttov_init_-
predictor.F90 rttov_init_prof.F90 rttov_init_rad.F90 rttov_init_sunglint.F90

rttov_init_traj_sta.F90 rttov_init_trans_scatt_ir.F90 rttov_intavg_chan.F90
rttov_intavg_chan_ad.F90 rttov_intavg_chan_k.F90 rttov_intavg_chan_tl.F90 rttov_-
intavg_prof.F90 rttov_intavg_prof_ad.F90 rttov_intavg_prof_k.F90 rttov_intavg_-
prof_tl.F90 rttov_integrate.F90 rttov_integrate_ad.F90 rttov_integrate_k.F90
rttov_integrate_tl.F90 rttov_k.F90 rttov_locpat.F90 rttov_locpat_ad.F90 rttov_-
locpat_k.F90 rttov_locpat_tl.F90 rttov_mfasis.F90 rttov_mfasis_ad.F90 rttov_-
mfasis_k.F90 rttov_mfasis_tl.F90 rttov_mult_profiles_k.F90 rttov_mw_clw_absorption.F9
rttov_mw_clw_absorption_ad.F90 rttov_mw_clw_absorption_k.F90 rttov_mw_clw_-
absorption_tl.F90 rttov_nullify_prof.F90 rttov_opdep.F90 rttov_opdep_ad.F90
rttov_opdep_k.F90 rttov_opdep_tl.F90 rttov_opdpscattir.F90 rttov_opdpscattir_-
ad.F90 rttov_opdpscattir_k.F90 rttov_opdpscattir_tl.F90 rttov_opts_eq.F90 rttov_-
profaux.F90 rttov_profaux_ad.F90 rttov_profaux_k.F90 rttov_profaux_tl.F90 rttov_-
refsun.F90 rttov_refsun_ad.F90 rttov_refsun_k.F90 rttov_refsun_tl.F90 rttov_-
setpredictors_7.F90 rttov_setpredictors_78.F90 rttov_setpredictors_78_ad.F90
rttov_setpredictors_78_k.F90 rttov_setpredictors_78_tl.F90 rttov_setpredictors_-
7_ad.F90 rttov_setpredictors_7_k.F90 rttov_setpredictors_7_tl.F90 rttov_setpredictors
8.F90 rttov_setpredictors_8_ad.F90 rttov_setpredictors_8_k.F90 rttov_setpredictors_-
8_tl.F90 rttov_setpredictors_9.F90 rttov_setpredictors_9_ad.F90 rttov_setpredictors_
9_k.F90 rttov_setpredictors_9_tl.F90 rttov_tl.F90 rttov_transmit.F90 rttov_-
transmit_9_solar.F90 rttov_transmit_9_solar_ad.F90 rttov_transmit_9_solar_-
k.F90 rttov_transmit_9_solar_tl.F90 rttov_transmit_ad.F90 rttov_transmit_-
k.F90 rttov_transmit_tl.F90 rttov_user_options_checkinput.F90 rttov_user_-
profile_checkinput.F90 rttov_add_scatt_prof.F90 rttov_alloc_emis_ret_terms.F90
rttov_boundaryconditions.F90 rttov_boundaryconditions_ad.F90 rttov_boundaryconditions
tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90 rttov_eddington_ad.F90
rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_-
ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_-
tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_-
integratesource.F90 rttov_integratesource_ad.F90 rttov_integratesource_tl.F90
rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_tl.F90 rttov_nullify_-
scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_scatt_emis_retrieval.F90
rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_
test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90
ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90
mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_-
gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90
predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_-
spectra.F90 vol_fracs.F90 rttov_coef_info.F90 rttov_mfasis_lut_info.F90 rttov_-
print_cld_profile.F90 rttov_print_opts.F90 rttov_print_opts_scatt.F90 rttov_-
print_profile.F90 rttov_print_radiance_quality.F90 rttov_parallel_ad.F90 rttov_-
parallel_direct.F90 rttov_parallel_k.F90 rttov_parallel_scatt.F90 rttov_parallel_-
scatt_ad.F90 rttov_parallel_scatt_tl.F90 rttov_parallel_tl.F90 rttov_k_ad.F90
rttov_k_bf.F90 rttov_k_tl.F90 rttov_make_cld_profile_inc.F90 rttov_make_emisrefl_-
inc.F90 rttov_make_opt_param.F90 rttov_make_opt_param_inc.F90 rttov_make_-
pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_-
scale_cld_profile_inc.F90 rttov_scale_opt_param_inc.F90 rttov_scale_pccomp_-
inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_-
test.F90

Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_-fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_-windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_-bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_-fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surfexcdriver.F90 surfws.F90 surfexcdriver.h surfws.h osm.cfg srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90 srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_mod.F90 surfseb_-ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 vexcs_mod.F90 vlamsk_-mod.F90 vsurf_mod.F90 callpar1s.F90 cpg1s.F90 dtforc.F90 incdat.F90 netcdf_-utils.F90 rdfvar.F90 rdsupr.F90 sucst.F90 suct01s.F90 sudcdf.F90 sufcdf.F90 sugdi1s.F90 sugp1s.F90 suinif1s.F90 sulun1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90 wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 fcttim.h mpl_mod_ctl.F90

Files modified (TRANS): dealloc_resol_mod.F90

Files modified (WAM): uras3a.F intwaminput.F yowcoup.F

Observations

- Add three more RTTOV binaries to build (IFS-599)
- All-sky superob thinning in screening trajectory (IFS-427)
- COPE: add ability for IFS to read odb2 data files (IFS-288)
- Change satellite longitude for GOES-15 (IFS-591)
- Fixes for DBNet update (IFS-627)
- Full RTTOV upgrade to version 12.2 (IFS-425)
- IR aerosol detection bugfix (IFS-515)
- Improve preparedness for potential future changes to the GEO radiance observing system (IFS-590)
- Introduce new Experimental Observation Ingest Framework (IFS-287)
- Microwave observation operator upgrades including partial RTTOV v12.2 upgrade (IFS-412)
- Negative Q cleanup in observation operator (IFS-424)
- ODB index violations (IFS-547)
- Passive AMSU-A all sky fixes and improvements (IFS-305)
- Perform more stringent checks on GEO radiances in pre-screening (IFS-587)
- Prepare for GOES-16 version 2 BUFR (IFS-651)
- Processing of BUFR dropsonde and descent reports (IFS-730)
- SATIMSIM: additional contribution for 46r1 (IFS-572)
- Store observation arrival time in ODB (IFS-542)
- Various BUFR2ODB fixes and improvements (IFS-493)
- add Convection and PBL type to ODB space for allsky (IFS-405)
- allow passive assimilation of MWI over land using ATLAS (IFS-307)
- compute and use lsm_FOV for MWIs (SSMIS-F17, GMI and AMSR-2) (IFS-306)
- premwimg runs out of memory with 12-hour window (e.g. CAMS) (IFS-618)
- preparations for new scatterometers (IFS-435)

Peter Lean - dipl_CY45R2_experimental_obs_framework - BIT IDENTICAL

Introduce new Experimental Observation Ingest Framework (IFS-287)

A new framework to allow scientists to ingest sample observational data into IFS for RD experimentation is introduced:

- allows input data to be provided in native file format / schema e.g. hdf5, netcdf4 etc
- user provides configuration file which describes how native data structure maps into ODB schema.
- data are automatically converted into ODB schema/format during makeodb inside the experiment.

The changes aim to make it far easier for scientists to quickly set up RD experiments using observational data from new sources for evaluation.

Files modified (IFS): `fpgpnorm.F90 ifs_dbase_view_mod.F90`

Files modified (IFSOBS): `CMakeLists.txt History.txt VERSION.cmake config.sh README.md cat_dbase.md dbase_view_mod.md generate_docs.sh match_dbase.md CMakeLists.txt CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 netcdf_file_mod.F90 quicksort_mod.F90 dbase_factory_mod.F90 odb2_dbase_mod.F90 dbase_kinds_mod.F90 dbase_view_mod.F90 CMakeLists.txt map_dbase_mod.F90 mapping_aux_funcs.F90 mapping_`

parser_mod.F90 mappings_mod.F90 match_dbase_mod.F90 CMakeLists.txt cat_dbase.F90 match_dbase.F90 CMakeLists.txt nc_sample_map_dbase.cdl test_map_dbase_bufr_mapping.dat test_map_dbase_mapping.dat test_convert_dbase_odb1.sh test_dbase_view.F90 test_join_views.F90 test_ll.F90 test_match_dbase.sh test_quicksort.F90

Peter Lean - dipl_CY45R2_cope_ifs - BIT IDENTICAL

COPE: add ability for IFS to read odb2 data files (IFS-288)

ODB1 is used as the in-memory data store with which we interact with observations inside IFS. This change provides an option to allow IFS to read observations from the odb2 file format into ODB1 in-memory, as required for the COPE architecture. It removes the need for an explicit odb2 to odb1 conversion step prior to running IFS.

Since odb_api is not a parallel library, ifsobs takes responsibility for partitioning and message passing of the data into parallel ODB1 pools. The format conversion is also handled implicitly by the ifsobs library.

By default, this option will be disabled. It is only intended to be activated once the full COPE processing chain is ready.

Files modified (CMAKE): odbport.cmake

Files modified (IFS): csekf2.F90 fpgpnorm.F90 readoba.F90

Files modified (IFSOBS): odb1_dbase_mod.F90 odb2_dbase_mod.F90 dbase_view_mod.F90 partition_dbase_mod.F90 test_cope_repartitioning.F90

Files modified (ODB): genc.c Convert_dbase.F90

Files modified (SSA): ssa.F90

Peter Weston - stpw_CY45R1_amsua_allsky_fixes_final - NON-METEOROLOGICAL

Passive AMSU-A all sky fixes and improvements (IFS-305)

Fix a bug in the emissivity assignment

Set more suitable VarBC predictors for AMSU-A channel 3 and 4

Allow for use of AMSU-A instruments where the window channels have failed

All of these changes only affect the passive use of AMSU-A all sky.

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 varbc_allsky.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_obsop.F90 mwave_obsop_ad.F90 mwave_obsop_tl.F90 mwave_obsop_traj.F90 mwave_screen.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90

hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.
cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_-
layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_-
scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_-
jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90
suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90
chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_-
stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90

cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): `b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90`

Files modified (SATRAD): `mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90`

Files modified (WAM): `altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F`

Katrin Lonitz, Yoichi Hirahara - stg_CY45R1_allsky_for_46r1 - METEOROLOGICAL

compute and use lsm_FOV for MWIs (SSMIS-F17, GMI and AMSR-2) (IFS-306)

Each Microwave observation has a footprint depending on it's frequency. We use the 10GHz footprint for AMSR2 and GMI and the 19GHz footprint for SSMIS-FOV to compute how the land-sea mask is affected by this footprint. We name this land-sea mask "lsm_fov", stored in odb space. lsm_fov is more accurate than the lsm used, which depends on the resolution of each loop. lsm_fov is then later used (if available) to decide if a superob is contaminated by land (not yet assimilated) or not (assimilated). I test two different configurations: one which allows no land-contamination at all (default) and one which allows 1% land contamination. 1% has been identified to cause a change in brightness temperature of 1K, which is in the noise level of FG dep.

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 initmdb.F90 update_obsdb.F90 yomdb_defs.h yomdb_defs_undef.h yomdb_vars.h cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 gom_plus.F90 grib_-utils_mod.F90 ifs_dbase_view_mod.F90 ifsobs_schema_mod.F90 iostream_mix.F90 parmwave.F90 sats_mix.F90 surface_fields_mix.F90 varbc_pred.F90 yom_grib_-codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsats.F90 yomsekf.F90 mwave_assign_emis_amsr2.F90 mwave_assign_emis_gmi.F90 mwave_assign_emis_ssmis.F90 mwave_diags.F90 mwave_emis.F90 mwave_get.F90 mwave_get_ad.F90 mwave_get_tl.F90 mwave_obsop.F90 mwave_obsop_ad.F90 mwave_obsop_tl.F90 mwave_put.F90 mwave_-screen.F90 mwave_setup.F90 mwave_wrapper.F90 nammwave.nam.h namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 bgobs.F90 departure_jo.F90 hinth.F90 hradp_ml.F90 hradp_ml_ad.F90 hradp_ml_tl.F90 hretr_-rad.F90 obsop_rad.F90 qneg.F90 qnegad.F90 qnegtl.F90 radtr_ml.F90 radtr_ml_-ad.F90 radtr_ml_tl.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_-main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_-geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (IFSAUX): `rttov_const.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake`

```
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
```

domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_amsr2_-
1d.F90 b2o_convert_asr.F90 b2o_convert_gmi.F90 b2o_convert_ssmis_1d.F90 get_-
varindex.F90 sufger_aeolus.sql aeolus.h allsky.h cma.h links_aeolus_hdr.sql
robhdr_rad.sql sat.h sat_ssmi.sql sufger_aeolus.sql type_definitions.h update_-
hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_-
common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign ecma2ecmascr
Merge_gmi_swaths.F90

Files modified (SATRAD): find_lsm.h get_lsm.h gaussgrid.F90 mod_mie.F90 mwave_const.F90
rttov_types.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_get_rtcoeff.F90
mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_-

lsm.F90 get_lsm.F90 bufr_grid_screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_-
gmi_1d.F90 bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 rttov_scatt_-
make_coef.F90 rttov_ec_setopts.F90 rttov_ad.F90 rttov_calcbt.F90 rttov_calcbt_-
ad.F90 rttov_calcbt_tl.F90 rttov_calcrad.F90 rttov_calcrad_ad.F90 rttov_calcrad_-
k.F90 rttov_calcrad_tl.F90 rttov_direct.F90 rttov_integrate.F90 rttov_integrate_-
ad.F90 rttov_integrate_k.F90 rttov_integrate_tl.F90 rttov_k.F90 rttov_tl.F90
rttov_add_scatt_prof.F90 rttov_boundaryconditions.F90 rttov_boundaryconditions_-
ad.F90 rttov_boundaryconditions_tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90
rttov_eddington_ad.F90 rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_-
hydro.F90 rttov_hydro_ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_-
ad.F90 rttov_iniedd_tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_-
iniscatt_tl.F90 rttov_integratesource.F90 rttov_integratesource_ad.F90 rttov_-
integratesource_tl.F90 rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_-
tl.F90 rttov_nullify_scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_-
scatt_emis_retrieval.F90 rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90
rttov_scatt_tl.F90 rttovscatt_test_one.F90 convert_mietable.F90 density_all.F90
gamma_dsd.F90 get_dia.F90 ice_density.F90 liu_dda.F90 liu_density.F90 melting_-
layer.F90 mg_ellips.F90 mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90
mie_sphere.F90 mod_gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_-
water.F90 permittivity.F90 predict_mom07.F90 predict_psd.F90 predict_psd_-
F07.F90 scattering.F90 set_spectra.F90 vol_fracs.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Katrin Lonitz - stg_CY45R1_allsky_for_46r1 - NON-METEOROLOGICAL

allow passive assimilation of MWI over land using ATLAS (IFS-307)

Changes include using emissivity values from the ATLAS for GMI, SSMIS-F17 and AMSR2 to allow passive assimilation of these MWIs over land (Fail(constant) in blacklist)

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90
chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 initmdb.F90
update_obsdb.F90 yomdb_defs.h yomdb_defs_undef.h yomdb_vars.h cnt3_glo.F90
csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 gom_plus.F90 grib_-
utils_mod.F90 ifs_dbase_view_mod.F90 ifsobs_schema_mod.F90 iostream_mix.F90
parmwave.F90 sats_mix.F90 surface_fields_mix.F90 varbc_pred.F90 yom_grib_-
codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsats.F90 yomsekf.F90
mwave_assign_emis_amsr2.F90 mwave_assign_emis_gmi.F90 mwave_assign_emis_ssmis.F90
mwave_diags.F90 mwave_emis.F90 mwave_get.F90 mwave_get_ad.F90 mwave_get_tl.F90
mwave_obsop.F90 mwave_obsop_ad.F90 mwave_obsop_tl.F90 mwave_put.F90 mwave_-
screen.F90 mwave_setup.F90 mwave_wrapper.F90 nammwave.nam.h namsekf.nam.h black.F90
defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 bgobs.F90
departure_jo.F90 hinth.F90 hradp_ml.F90 hradp_ml_ad.F90 hradp_ml_tl.F90 hretr_-
rad.F90 obsop_rad.F90 qneg.F90 qnegad.F90 qnegtl.F90 radtr_ml.F90 radtr_ml_-
ad.F90 radtr_ml_tl.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90
cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_-

main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90
radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_-
geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90
suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90
updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90
sujbwavelet_stdevs.F90

Files modified (IFSAUX): rttov_const.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90

cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_amsr2_-

1d.F90 b2o_convert_asr.F90 b2o_convert_gmi.F90 b2o_convert_ssmis_1d.F90 get_-
varindex.F90 sufger_aeolus.sql aeolus.h allsky.h cma.h links_aeolus_hdr.sql
robhdr_rad.sql sat.h sat_ssmi.sql sufger_aeolus.sql type_definitions.h update_-
hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_-
common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign ecma2ecmascr
Merge_gmi_swaths.F90

Files modified (SATRAD): find_lsm.h get_lsm.h gaussgrid.F90 mod_mie.F90 mwave_const.F90
rttov_types.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_get_rtcoeff.F90
mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_-
lsm.F90 get_lsm.F90 bufr_grid_screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_-
gmi_1d.F90 bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 rttov_scatt_-
make_coef.F90 rttov_ec_setopts.F90 rttov_ad.F90 rttov_calcbt.F90 rttov_calcbt_-
ad.F90 rttov_calcbt_tl.F90 rttov_calcrad.F90 rttov_calcrad_ad.F90 rttov_calcrad_-
k.F90 rttov_calcrad_tl.F90 rttov_direct.F90 rttov_integrate.F90 rttov_integrate_-
ad.F90 rttov_integrate_k.F90 rttov_integrate_tl.F90 rttov_k.F90 rttov_tl.F90
rttov_add_scatt_prof.F90 rttov_boundaryconditions.F90 rttov_boundaryconditions_-
ad.F90 rttov_boundaryconditions_tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90
rttov_eddington_ad.F90 rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_-
hydro.F90 rttov_hydro_ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_-
ad.F90 rttov_iniedd_tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_-
iniscatt_tl.F90 rttov_integratesource.F90 rttov_integratesource_ad.F90 rttov_-
integratesource_tl.F90 rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_-
tl.F90 rttov_nullify_scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_-
scatt_emis_retrieval.F90 rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90
rttov_scatt_tl.F90 rttovscatt_test_one.F90 convert_mietable.F90 density_all.F90
gamma_dsd.F90 get_dia.F90 ice_density.F90 liu_dda.F90 liu_density.F90 melting_-
layer.F90 mg_ellips.F90 mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90
mie_sphere.F90 mod_gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_-
water.F90 permittivity.F90 predict_mom07.F90 predict_psd.F90 predict_psd_-
F07.F90 scattering.F90 set_spectra.F90 vol_fracs.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Katrin Lonitz - stg_CY45R1_allsky_for_46r1 - BIT IDENTICAL

add Convection and PBL type to ODB space for allsky (IFS-405)

Additional output variables are stored in ODB space for all-sky.

This change should be bit-identical,

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90
chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 initmdb.F90
update_obsdb.F90 yomdb_defs.h yomdb_defs_undef.h yomdb_vars.h cnt3_glo.F90
csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 gom_plus.F90 grib_-
utils_mod.F90 ifs_dbase_view_mod.F90 ifsobs_schema_mod.F90 iostream_mix.F90
parmwave.F90 sats_mix.F90 surface_fields_mix.F90 varbc_pred.F90 yom_grib_-

codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsats.F90 yomsekf.F90
mwave_assign_emis_amsr2.F90 mwave_assign_emis_gmi.F90 mwave_assign_emis_ssmis.F90
mwave_diags.F90 mwave_emis.F90 mwave_get.F90 mwave_get_ad.F90 mwave_get_tl.F90
mwave_obsop.F90 mwave_obsop_ad.F90 mwave_obsop_tl.F90 mwave_put.F90 mwave_-
screen.F90 mwave_setup.F90 mwave_wrapper.F90 nammwave.nam.h namsekf.nam.h black.F90
defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 bgobs.F90
departure_jo.F90 hinth.F90 hradp_ml.F90 hradp_ml_ad.F90 hradp_ml_tl.F90 hretr_-
rad.F90 obsop_rad.F90 qneg.F90 qnegad.F90 qnegtl.F90 radtr_ml.F90 radtr_ml_-
ad.F90 radtr_ml_tl.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90
cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_-
main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90
radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_-
geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90
suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90
updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90
sujbwavelet_stdevs.F90

Files modified (IFSAUX): rttov_const.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-

tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-

inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90 ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90 jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_gmi.F90 b2o_convert_ssmis_1d.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h allsky.h cma.h links_aeolus_hdr.sql robhdr_rad.sql sat.h sat_ssmi.sql sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign ecma2ecmascr Merge_gmi_swaths.F90

Files modified (SATRAD): find_lsm.h get_lsm.h gaussgrid.F90 mod_mie.F90 mwave_const.F90 rttov_types.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_gmi_1d.F90 bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 rttov_scatt_make_coef.F90 rttov_ec_setopts.F90 rttov_ad.F90 rttov_calcbt.F90 rttov_calcbt_ad.F90 rttov_calcbt_tl.F90 rttov_calcrad.F90 rttov_calcrad_ad.F90 rttov_calcrad_k.F90 rttov_calcrad_tl.F90 rttov_direct.F90 rttov_integrate.F90 rttov_integrate_ad.F90 rttov_integrate_k.F90 rttov_integrate_tl.F90 rttov_k.F90 rttov_tl.F90 rttov_add_scatt_prof.F90 rttov_boundaryconditions.F90 rttov_boundaryconditions_ad.F90 rttov_boundaryconditions_tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90 rttov_eddington_ad.F90 rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_integratesource.F90 rttov_integratesource_ad.F90 rttov_integratesource_tl.F90 rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_tl.F90 rttov_nullify_scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_scatt_emis_retrieval.F90 rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90 ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90 mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90 predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_spectra.F90 vol_fracs.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Alan Geer, Katrin Lonitz - stg_CY45R1_rttov_scatt_12.2 - METEOROLOGICAL

Microwave observation operator upgrades including partial RTTOV v12.2 upgrade (IFS-412)

This is a broad scientific and technical upgrade to the microwave observation operators RTTOV and RTTOV-SCATT. The upgrade allows RTTOV to use the most accurate science possible, it prepares the way for future sensors like Ice Cloud Imager (ICI), and it includes a partial upgrade of the RTTOV code to version 12.2, reducing the workload when merging future RTTOV code versions.

- Band corrections are implemented for all microwave sensors, improving accuracy of simulated microwave radiances. (scientific)
- RTTOV-SCATT now does its radiative transfer in terms of radiance, not brightness temperature, improving accuracy by several tenths of a Kelvin in some channels (this also prepares the way for future mm-wave sensors like ICI). (scientific)
- All-sky dynamic emissivity retrievals have been externalised and use a newly-provided RTTOV framework. This involves minor changes and improvements in the scientific basis of the retrieval, such as the use of the correct clear-sky emissivity in the clear-sky column. (scientific).
- Include the full upgrade to v12.2 code for RTTOV-SCATT (technical, but not bit-reproducible)
- Include some aspects of the main RTTOV upgrade to v12.2 (such as rttov_consts.F90 and rttov_types.F90) and handling / initialising the v12.2 RTTOV options structure. (technical)

Files modified (IFS): `sats_mix.F90 yomsats.F90`

Files modified (IFSAUX): `rttov_const.F90`

Files modified (SATRAD): `mod_mie.F90 rttov_types.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 rttov_scatt_make_coef.F90 rttov_ec_setopts.F90 rttov_ad.F90 rttov_calcbt.F90 rttov_calcbt_ad.F90 rttov_calcbt_tl.F90 rttov_calcrad.F90 rttov_calcrad_ad.F90 rttov_calcrad_k.F90 rttov_calcrad_tl.F90 rttov_direct.F90 rttov_integrate.F90 rttov_integrate_ad.F90 rttov_integrate_k.F90 rttov_integrate_tl.F90 rttov_k.F90 rttov_tl.F90 rttov_add_scatt_prof.F90 rttov_boundaryconditions.F90 rttov_boundaryconditions_ad.F90 rttov_boundaryconditions_tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90 rttov_eddington_ad.F90 rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_integratesource.F90 rttov_integratesource_ad.F90 rttov_integratesource_tl.F90 rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_tl.F90 rttov_nullify_scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_scatt_emis_retrieval.F90 rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90 ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90 mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90 predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_spectra.F90 vol_fracs.F90`

Alan Geer - stg_CY45R1_negative_q_cleanup - METEOROLOGICAL

Negative Q cleanup in observation operator (IFS-424)

Negative humidities have been treated in diverse ways through the observation operator. This is particularly true

for satellite radiances, to protect calls to RTTOV. This update cleans up the code by allowing the GOM_PLUS to provide a choice of humidity variables to observaiton operators: the variable QF is the original humidity variable, potentially including negative Q if generated by the model or the interpolation scheme, or QN, which is protected against negative humidities but retains TL/AD sensitivity thanks to the use of the QNEGLIM routine to do this.

The following parts of the observation operator have been cleaned up to use QN rather than previous ad-hoc approaches:

- Clear-sky radiances (hretr_rad, bgobs, obsop_rad, radtr_ml etc.)
- All-sky radiances: use QN directly and stop checking and rejecting data due to negative Q
- VarBC - use QN directly, rather than calling a routine to protect against negative Q
- Observations using derived surface quantities (e.g. roughness lengths - this is probably just scatterometer) will continue to use humidity protected against -ve numbers, but now based on the QNEGLIM routine (retaining TL/AD sensitivity) rather than the old QNEG (which discards all sensitivity below zero)

Apart from simplifying and standardising the observation operator code, this is useful for OOPS in order to eliminate problem areas in the all-sky observation operator (e.g. rejection of data during minimisation).

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 gom_plus.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 varbc_pred.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_obsop.F90 mwave_obsop_ad.F90 mwave_obsop_tl.F90 mwave_screen.F90 mwave_setup.F90 mwave_wrapper.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 bgobs.F90 departure_jo.F90 hinth.F90 hradp_ml.F90 hradp_ml_ad.F90 hradp_ml_tl.F90 hretr_rad.F90 obsop_rad.F90 qneg.F90 qnegad.F90 qnegtl.F90 radtr_ml.F90 radtr_ml_ad.F90 radtr_ml_tl.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake`

compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-

vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Alan Geer, Cristina Lupu - stg_CY45R1_esuite_20180312_rttov_12.2 - NON-METEOROLOGICAL

Full RTTOV upgrade to version 12.2 (IFS-425)

[No description]

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90
chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_-
obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90

grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 yom_-
grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsats.F90
yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90
gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90
hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.
cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_-
layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_-
scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_-
jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90
suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90
chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_-
stdevs.F90

Files modified (IFSAUX): rttov_const.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
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TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
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dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
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fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
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sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): throw.h mod_camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_-
mie.F90 mod_mwatlas_m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_-
atlas.F90 mod_rttov_fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_-
test.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90 rttov_chain.F90
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get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_-
rttov_tl.F90 bufr_screen_reo3_superob.F90 create_aer_clim_prof.F90 example_-
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ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90
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test.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Alan Geer, Katrin Lonitz - stg_CY45R1_superob_thin - METEOROLOGICAL

All-sky superob thinning in screening trajectory (IFS-427)

Rather than discarding unwanted all-sky super-observations at the BUFR pre-processing stage, they will now be processed in the screening trajectory. This allows them to contribute to monitoring and visualisation of weather features at higher resolution. It also prepares the way for a change in superob resolution to follow changes in the effective resolution of precipitation in the forecast model. Around 2.5% of microwave imager data will be lost and FG fits will get better, due to stricter treatment of edge-of-swath and coastline superobs; however much of this data will be regained and treated better with improvements in coastline and LSM handling coming in another branch.

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_-

obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90
grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90
yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90
mwave_put.F90 mwave_screen.F90 mwave_setup.F90 nammwave.nam.h namsekf.nam.h
black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90
departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90
cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_-
phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90
vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_-
layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90
suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90
interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90
pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-

ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h

obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): gaussgrid.F90 mwave_const.F90 mwave_get_rtcoeff.F90 mwave_-
obsop_rttov.F90 bufr_grid_screen.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Giovanna De Chiara - dig_CY45R1_esuite_20180312_4newscatt - BIT IDENTICAL

preparations for new scatterometers (IFS-435)

Updates to be able to process 5 new scatterometers that will be launched in the next few months.

Files modified (ENKF): obs_constants.F90

Files modified (IFS): call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90
postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90
getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90
sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90
fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 jo_table_mod.F90 parersca.F90
sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_-
ygfl.F90 yomafn.F90 yomcoctp.F90 yomcosjo.F90 yomgrib.F90 yommwave.F90 yomppc.F90
yomscc.F90 yomsekf.F90 yomthlim.F90 mwave_emis.F90 mwave_setup.F90 namscc.nam.h
namsekf.nam.h ascatif.F90 black.F90 decis.F90 defrun.F90 fgwnd.F90 fscatin.F90
gefger.F90 kscatin.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 scaqc.F90
scat_ob.F90 sufglim.F90 thin_red_presort.F90 wscatin.F90 co2slicing.F90 co2slicing_-
ml.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90
chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90
cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_-
aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 vdfouter.F90 wvxf2gb.F90
radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_-
geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 cmoctmap.F90 cmoctmap_inv.F90
su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90
suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90
getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90
suscat.F90

Files modified (IFSAUX): abor1.intfb.h abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi

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Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
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ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
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bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
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cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
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metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
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iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_fscat.F90 b2o_convert_msg.F90 b2o_convert_-
oscat.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_-
hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_-
cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_-
aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): getcparam.h mod_cparam.F90 mwave_const.F90 mwave_get_rtcoeff.F90
mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 gensatim.F90
rttov_read_ascii_sccldcoef.F90 rttov_read_coefs.F90 co2cld.F90 getcparam.F90

rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_fscat_flag.F fscat_read_bufr.F fscat_write_bufr.F fupdate_windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_bufr.F kwrite_windstat.F read_speed_bias.F write_fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SSA): setcomssa.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Tomas Kral, Bruce Ingleby - datk_CY45R1_bufr2odb_dropdup - NON-METEOROLOGICAL

Various BUFR2ODB fixes and improvements (IFS-493)

Notable changes:

- Preparation for the processing of BUFR TEMP DROP and BUFR TEMP DESCENT data.
- Experimental support for the superobbing of high-resolution dropsonde/radiosonde data (disabled by default).
- Station identifiers are now sanitized to contain only printable (7-bit) ASCII symbols.
- Ability to create unique seqno keys (disabled by default).
- (BUFR) PILOT SHIP converter was using incorrect station identifier key.
- CRIS and IASI converters were cleaned up to improved readability. Also, Planck coefficients, which used to be recomputed for each BUFR message, are now cached.

Dependencies: b2o 0.7.0, ecbuild 2.9.0

Reima Eresmaa - ste_CY45R1_aerosol_detection_bugfix - METEOROLOGICAL

IR aerosol detection bugfix (IFS-515)

Update infrared aerosol detection channels, and re-specify related tuning parameters, to make them consistent for AIRS, IASI and CrIS.

Git scripts branch is used only for broadcasting the new data files to the testing experiment.

Tomas Kral, Mohamed Dahoui - datk_CY46R1_rdbtime - BIT IDENTICAL

Store observation arrival time in ODB (IFS-542)

With the continuous DA, it is very useful to monitor the timeliness of observations. SAPP has this possibility already, but it would be useful to add it to our monitoring tools as well. This will allow us to add timeliness curve to all our monitoring plots and also to the alarm system.

ifs-bundle: b2o 0.7.1, cope 0.7.2

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (IFS): `cpedia.F90 fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 satsim.F90 hpos.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 control_vectors_comm_mod.F90 field_definitions.F90 field_gfl_wrapper.F90 iogride_mod.F90 parfpos.F90 surface_fields_mix.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 yom_grib_codes.F90 yomafn.F90 yomppc.F90 namafn.nam.h airepbe.F90 dribube.F90 paobbe.F90 pilotbe.F90 ptendcor.F90 synopbe.F90 tempbe.F90 interchan_obserr_cor.F90 aer_phy3.F90 aer_src.F90 callpar.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 suorog.F90 supp.F90 mod_ini.F90 updtim.F90 getmini.F90 savmini.F90 suinfce.F90 sujbwavwri.F90`

Files modified (ODB): `b2o_convert_grad.F90 b2o_convert_msg.F90`

Files modified (SATRAD): `mod_screen_1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F90`

Files modified (WAM): `cal_second_order_spec.F90 ctuw.F90 h_max.F90 inwgrib.F90 kurtosis.F90 mpcrtbl.F90 peak_ang.F90 wgrib2fdb.F90`

Olivier Marsden, Peter Lean - daom_CY46_odb-fixes - BIT IDENTICAL

ODB index violations (IFS-547)

Running ifstraj task with ODB_TEST_INDEX_RANGE=-1 at CY46 is throwing up multiple ODB index bound violations, and is possibly resulting in memory corruption.

Files modified (IFS): `ctxinitdb.F90 fgwnd.F90 departure_jo.F90 departure_joad.F90 departure_jotl.F90 hop.F90 hop_decide_required_sqls.F90 hradp_ml.F90 hretr_conv.F90`

Files modified (ODB): `sat_atovs_hyper.sql sat_atovs_hyper.sql decis_robhdr_2.sql robhdr.sql sat_atovs.sql sat_atovs_hyper.sql`

Cristina Lupu, Alan Geer - stc_CY45R1_esuite_20180416_rttov_12.2_ircld - BIT IDENTICAL

SATIMSIM: additional contribution for 46r1 (IFS-572)

A couple of fixes for SATIMSIM for 46r1 (with RTTOV-12.2), as follows:

- the correct cloud units (we have moved to simply giving mass mixing ratio in kg/kg)
- the clouds mixing ratios are supposed to be in-cloud amounts, so the grid-box average from the model must first be divided by the layer cloud fraction before input to RTTOV-12.2
- full streams radiative transfer

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 satsim.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_-gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsats.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 level1cgeos_-ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 co2slicing.F90 co2slicing_-ml.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 rad1cemis.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_-aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 wvxf2gb.F90 radiation_-scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_-jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (IFSAUX): abor1.intfb.h rttov_const.F90 rttov_ec_mod.F90 abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90 AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV. ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9 GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV. LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90 ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90 RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface

nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
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bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
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sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
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dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
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cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
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sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
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Files modified (OBSTAT): obstat_def.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_msg.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): throw.h getcparam.h mod_camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_mie.F90 mod_mwatlas_m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_atlas.F90 mod_rttov_fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_test.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90 rttov_chain.F90 rttov_coef_io_mod.F90 rttov_ec_settings.F90 rttov_fast_coef_utils_mod.F90 rttov_getoptions.F90 rttov_global.F90 rttov_hdf_chanprof_io.F90 rttov_hdf_coefs.F90 rttov_hdf_emissivity_io.F90 rttov_hdf_options_config_io.F90 rttov_hdf_options_rt_all_io.F90 rttov_hdf_options_rt_ir_io.F90 rttov_hdf_options_rt_mw_io.F90 rttov_hdf_profile_io.F90 rttov_hdf_profiles.F90 rttov_hdf_radiance_io.F90 rttov_hdf_reflectance_io.F90 rttov_hdf_rttov_coef_io.F90 rttov_hdf_rttov_coef_pcc_io.F90 rttov_htfrtc_interface_mod.F90 rttov_interface_mod.F90 rttov_lapack_mod.F90 rttov_math_mod.F90 rttov_scattering_mod.F90 rttov_solar_refl_mod.F90 rttov_tessem_mod.F90 rttov_test_k_mod.F90 rttov_test_mod.F90 rttov_types.F90 rttov_unix_env.F90 rttov_zutility.F90 mwave_ec_setopts.F90 mwave_emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 create_aer_clim_prof.F90 example_aer_file_fwd.F90 example_aer_param_fwd.F90 example_cld_file_fwd.F90 example_cld_param_fwd.F90 example_fwd.F90 example_htfrtc_fwd.F90 example_k.F90 example_pc_fwd.F90 example_rttovscatt_fwd.F90 gensatim.F90 rttov_aer_clim_prof.F90 rttov_bpr_calc.F90 rttov_bpr_init.F90 rttov_conv_coef.F90 rttov_scatt_make_coef.F90 rttov_test.F90 rttov_test_get_pc_predictindex.F90 rttov_us76_prof.F90 rttovscatt_test.F90 rttovscatt_test_one.F90 rttov_distribute_coef.F90 rttov_distribute_coef_pccomp.F90 rttov_distribute_coef_scatt_ir.F90 rttov_distribute_coefs.F90 rttov_distribute_optpar_ir.F90 rttov_distribute_scattcoeffs.F90 rttov_channel_extract_mfasis.F90 rttov_channel_extract_pccoef.F90 rttov_channel_extract_scaercoef.F90 rttov_channel_extract_sccldcoef.F90 rttov_channel_extract_sublist.F90 rttov_dealloc_coef_htfrtc.F90 rttov_dealloc_coef_mfasis.F90 rttov_dealloc_coef_pccomp.F90 rttov_dealloc_coef_scatt_ir.F90 rttov_dealloc_coefs.F90 rttov_dealloc_optpar_

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rttov_read_binary_scaercoef.F90 rttov_read_binary_sccldcoef.F90 rttov_read_-
coefs.F90 rttov_read_coefs_htfrtc.F90 rttov_write_ascii_coef.F90 rttov_write_-
ascii_mfasis_file.F90 rttov_write_ascii_pccoef.F90 rttov_write_ascii_scaercoef.F90
rttov_write_ascii_sccldcoef.F90 rttov_write_binary_mfasis_file.F90 rttov_-
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sccldcoef.F90 rttov_write_coefs.F90 rttov_hdf_load.F90 rttov_hdf_save.F90 co2cld.F90
getcparam.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_-
ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_setopts.F90 rttov_ec_tl.F90 rttvi.F90
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refl.F90 rttov_alloc_opt_param.F90 rttov_alloc_predictor.F90 rttov_alloc_-
prof.F90 rttov_alloc_prof_internal.F90 rttov_alloc_profiles_dom.F90 rttov_-
alloc_rad.F90 rttov_alloc_raytracing.F90 rttov_alloc_sunglint.F90 rttov_alloc_-
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calcemis_ir_k.F90 rttov_calcemis_ir_tl.F90 rttov_calcemis_mw_ad.F90 rttov_-
calcemis_mw_k.F90 rttov_calcemis_mw_tl.F90 rttov_calcrad.F90 rttov_calcrad_-
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k.F90 rttov_dom_setup_profile_tl.F90 rttov_dom_tl.F90 rttov_erfcx.F90 rttov_-
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profaux.F90 rttov_profaux_ad.F90 rttov_profaux_k.F90 rttov_profaux_tl.F90 rttov_-
refsun.F90 rttov_refsun_ad.F90 rttov_refsun_k.F90 rttov_refsun_tl.F90 rttov_-
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7_ad.F90 rttov_setpredictors_7_k.F90 rttov_setpredictors_7_tl.F90 rttov_setpredictors
8.F90 rttov_setpredictors_8_ad.F90 rttov_setpredictors_8_k.F90 rttov_setpredictors_-
8_tl.F90 rttov_setpredictors_9.F90 rttov_setpredictors_9_ad.F90 rttov_setpredictors_
9_k.F90 rttov_setpredictors_9_tl.F90 rttov_tl.F90 rttov_transmit.F90 rttov_-
transmit_9_solar.F90 rttov_transmit_9_solar_ad.F90 rttov_transmit_9_solar_-
k.F90 rttov_transmit_9_solar_tl.F90 rttov_transmit_ad.F90 rttov_transmit_-
k.F90 rttov_transmit_tl.F90 rttov_user_options_checkinput.F90 rttov_user_-
profile_checkinput.F90 rttov_add_scatt_prof.F90 rttov_alloc_emis_ret_terms.F90
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rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_-
ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_-
tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_-
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rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_tl.F90 rttov_nullify_-
scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_scatt_emis_retrieval.F90
rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_
test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90
ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90
mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_-
gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90
predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_-
spectra.F90 vol_fracs.F90 rttov_coef_info.F90 rttov_mfasis_lut_info.F90 rttov_-
print_cld_profile.F90 rttov_print_opts.F90 rttov_print_opts_scatt.F90 rttov_-
print_profile.F90 rttov_print_radiance_quality.F90 rttov_parallel_ad.F90 rttov_-
parallel_direct.F90 rttov_parallel_k.F90 rttov_parallel_scatt.F90 rttov_parallel_-
scatt_ad.F90 rttov_parallel_scatt_tl.F90 rttov_parallel_tl.F90 rttov_k_ad.F90
rttov_k_bf.F90 rttov_k_tl.F90 rttov_make_cld_profile_inc.F90 rttov_make_emisrefl_-
inc.F90 rttov_make_opt_param.F90 rttov_make_opt_param_inc.F90 rttov_make_-
pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_-
scale_cld_profile_inc.F90 rttov_scale_opt_param_inc.F90 rttov_scale_pccomp_-
inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_-
test.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Chris Burrows, Tony McNally - stcb_CY45R1_fix_pregeos - NON-METEOROLOGICAL

Perform more stringent checks on GEO radiances in pre-screening (IFS-587)

Certain unphysical ASR brightness temperatures can get past the current pre-screening and cause ifstraj to fail (in September 2018, the GHG osuite failed). This change makes the checks more stringent by checking every brightness temperature in each BUFR report, though in usual situations, the number of obs passing the prescreening step will increase slightly.

Changes are required to:

ifs-scripts/gen/pregeos

ifs-source/satrad/programs/geos_prescreen.F90

An RD memo with more details is here: https://livelink.ecmwf.int/livelinkadmin/livelink.exe?func=ll&objId=8576825&objActi

Two sets of experiments have been run to test this:

Check if the ifstraj failure is fixed:

- h1ot - reproduce failure
- h1ou - protect against failure (failed cycle runs successfully)

Check behaviour in a non-problematic cycle:

- h1pi - control.
- h1pj - fix (~20% more obs for the Meteosats are assimilated - number of obs for other satellites are modified only slightly). The additional observations mostly appear in regions that are completely cloud-free.

Branches:

Source: stcb_CY45R1_fix_pregeos

Scripts: stcb_CY45R1_fix_pregeos (IFS-590 contains this change plus two other changes to the same script, so please merge stcb_CY45R1_fix_pregeos2 instead).

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_-mix.F90 varbc_rad.F90 varbc_to3.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 blinit.F90 defrun.F90 gefger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 amv_get_preds.F90 co2slicing.F90 co2slicing_ml.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 hsatang.F90 rad1cemis.F90`

radtr_ml.F90 aer_phy3.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90
cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_-
phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90
vdfmain.F90 vdfouter.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90
uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90
su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90
suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90
getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (IFSAUX): abor1.intfb.h mpl_comm_split_mod.F90 abor1.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
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sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
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dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
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dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
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extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
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var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): `obstat_def.F90 inisoftdef.F90 plotsoft.F90 updsoft.F90 writegridsta writescat.F90 writesoft.F90`

Files modified (ODB): `b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_msg.F90 b2o_convert_mwri_1d.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h black_robody_4.sql cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90`

Files modified (SATRAD): `getcparam.h mod_cparam.F90 mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 gensatim.F90 geos_prescreen.F90 rttov_read_ascii_sccldcoef.F90 rttov_read_coefs.F90 co2cld.F90 getcparam.F90 rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_-ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90`

Files modified (SSA): `setcomssa.F90`

Files modified (WAM): `altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F yowcoup.F`

Chris Burrows, Tony McNally - stcb_CY45R1_fix_pregeos2 - BIT IDENTICAL

Improve preparedness for potential future changes to the GEO radiance observing system (IFS-590)

This bit-identical change addresses two issues which may assist us when 46r1 is operational. Both are changes to the 'pregeos' script:

At 46r1, we will have the capability of using GEO radiances at higher zenith angles. We are prepared to accept and process all the data that are currently available to use, but we would like to be prepared in case we start receiving additional data (as we expect from GOES-16), thus an increase in the maximum zenith angle allowed should be increased from 70 to 74deg.

Similarly, we have an upper limit on the number of GOES-16 observations we can receive, and this is not much higher than what we currently receive. Therefore we will increase this limit considerably in case observations at high zenith angles are received, or more frequent data are supplied.

The issue IFS-587 also includes changes to pregeos. This mod has been tested on top of this:

- h1pj is the IFS-587 experiment
- h1q1 is as above but with the two changes described.

According to the Jo table, this change is bit-identical.

Branches:

Scripts: stcb_CY45R1_fix_pregeos2 (this includes the changes in IFS-587).

Chris Burrows, Tony McNally - stcb_CY46R1_goes15_longitude - NON-METEOROLOGICAL

Change satellite longitude for GOES-15 (IFS-591)

GOES-15 will drift from 135 degrees west to 128 degrees west from 29/10/18 to 7/11/18. In bufr2odb this longitude is hard-coded. It is not required in 45r1, but will be in 46r1, so this value needs to be updated.

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (IFS): `cpedia.F90 fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 satsim.F90 hpos.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 control_vectors_comm_mod.F90 field_definitions.F90 field_gfl_wrapper.F90 iogride_mod.F90 parfpos.F90 surface_fields_mix.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 yom_grib_codes.F90 yomafn.F90 yomppc.F90 namafn.nam.h airepbe.F90 dribube.F90 paobbe.F90 pilotbe.F90 ptendcor.F90 synopbe.F90 tempbe.F90 interchan_obserr_cor.F90 aer_phy3.F90 aer_src.F90 callpar.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 suorog.F90 supp.F90 mod_ini.F90 updtim.F90 getmini.F90 savmini.F90 suinfce.F90 sujbwavwri.F90`

Files modified (ODB): `b2o_amend.F90 b2o_decode.F90 get_varindex.F90 hdr.h b2o_internal.F90 varindex_module.F90`

Files modified (SATRAD): `mod_screen_1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F90`

Files modified (WAM): `cal_second_order_spec.F90 ctuw.F90 h_max.F90 inwgrib.F90 kurtosis.F90 mpcrtbl.F90 peak_ang.F90 wgrib2fdb.F90`

Tomas Wilhelmsson, Alan Geer - N/A - BIT IDENTICAL

Add three more RTTOV binaries to build (IFS-599)

Add three more binaries to ecbuild:

- rttov_conv_coef
- rttov_coef_info
- rttov_ascii2bin_scattcoef

[No branch]

Gabor Radnoti, Alan Geer, Paul Burton - [No branch] - BIT IDENTICAL

premwimg runs out of memory with 12-hour window (e.g. CAMS) (IFS-618)

As per recent email discussions between myself, [˜dag], [˜stg], [˜dab], the premwimg_ssmi task now runs out of memory in 46r1 v8 for CAMS configurations (which use a 12h observation window).

A workaround is to reduce maxObs in the premwimg script to 200, but this may not always be a bit-identical change so probably can't just go into the branch.

Ideally at this stage, we need a fix for this which is bit-identical for NWP, but still allows longer-window configurations to run as well.

[No branch]

Niels Bormann - str_CY45R2_fix_v8 - METEOROLOGICAL

Fixes for DBNet update (IFS-627)

The branch fixes two problems for the DBNet update intended to be included in 46R1. These arose because the 45R1 submission (IFS-414) was not compatible with changes introduced in 45R2. Without the changes, AMSU-A or MHS data from additional DBNet stations will not be available.

Only the following files should be changed, and the changes are on top of the v8 branch:

Source:

- satrad/module/mod_screen_1c_bufrmsg.F90: addition of allowed stations

Scripts:

- gen/fetchobs: add new data to appropriate file

Chris Burrows, Tony McNally - stcb_CY46R1_goes16_v2_expt - NON-METEOROLOGICAL

Prepare for GOES-16 version 2 BUFR (IFS-651)

A "version 2" CSR BUFR stream has been provided:

[ftp://ftp.star.nesdis.noaa.gov/pub/smcd/jpss-ait/G16_CSR_V2/]

This is intended to become the operational product. The quality of the data is very similar to version 1, but the volume will be greater due to a relaxed zenith angle check.

At some point it will be necessary to transition to the new version. The following actions are required:

1) In the script pregeos, the maximum number of allowed obs needs to be large enough to accept the additional obs. This is in 46r1 but not 45r1.
2) The ordering of the channels in the BUFR files has changed. This will require a modification to pregeos and to b2o_convert_msg.F90
3) Data from the new stream will need to be put on MARS.

These need to be done at the same time, and if this is done before 46r1 is operational, we need to implement this for 45r1 and 46r1 in a coordinated way.

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (IFS): fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 hpos.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 field_definitions.F90 field_gfl_wrapper.F90 iogride_mod.F90 parfpos.F90 surface_fields_mix.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 yom_grib_codes.F90 yomafn.F90 yomppc.F90 namafn.nam.h interchan_obserr_cor.F90 aer_phy3.F90 aer_src.F90 callpar.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 suorog.F90 supp.F90 mod_ini.F90 updtim.F90 suinfce.F90 sujbwavwri.F90

Files modified (ODB): b2o_amend.F90 b2o_convert_msg.F90 b2o_decode.F90 get_varindex.F90 hdr.h b2o_internal.F90 varindex_module.F90

Files modified (SATRAD): mod_screen_1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F90

Files modified (WAM): cal_second_order_spec.F90 ctuw.F90 h_max.F90 inwgrib.F90 kurtosis.F90 mpcrtbl.F90 peak_ang.F90 wgrib2fdb.F90

Bruce Ingleby, Tomas Kral - dabi_CY46R1.20190215_IFS-730-BDROP - NON-METEOROLOGICAL

Processing of BUFR dropsonde and descent reports (IFS-730)

At 46r1 Bufr2odb and other changes have been made so as to allow the processing of BUFR dropsonde and BUFR radiosonde descent data. I now want to make a fetchobs and blacklist change so that the data are included passively into the e-suite and o-suite. (The descent data needs eccodes 2.10.0 or later, which wasn't in the e-suite until mid-February.)

Ocean / Sea Ice

- An ice model should always be built when building NEMO (IFS-624)
- IFS hanging when using single precision (IFS-672)
- NEMO OpenMP optimisations (IFS-549)
- NEMO V3.6 updates + preparation for changes to the partial coupling scheme. (IFS-334)
- NEMO/LIM versions should be configurable (IFS-580)
- Port the opa experiment to ecFlow (IFS-452)
- Research experiments should be able to use XIOS (IFS-581)
- Use new parameter grib codes for the new wave parameters (IFS-683)
- bug fix for single precision (IFS-631)
- wm_sfc task fails due to incorrect field specification (IFS-643)

Kristian Mogensen, Sarah Keeley, Steffen Tietsche - ne1_CY45R1_nemo_for_CY46R1 - BIT IDENTICAL

NEMO V3.6 updates + preparation for changes to the partial coupling scheme. (IFS-334)

Updates to NEMO V3.6 code as part of ongoing development for future upgrade of NEMO model version.

Fortran code to implement a source code partial coupling scheme for the future.

Limited set of ocean output in GRIB on the atmospheric grid.

45r1 overlays will be dealt with by IFS-319.

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 updnemoocean.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 cnt4.F90 csekf2.F90 reresf.F90 hpos.F90 wrmlfp.F90 wrmlfp_io_serv.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iogride_mod.F90 iogridoe_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yoephy.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcosjo.F90 yommcc.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 naephy.nam.h nammcc.nam.h namsekf.nam.h getnemodiag.F90 getnemodiag3d.F90 ininemo.F90 black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 master.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0phy.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sumcc.F90 supp.F90 dealsc2.F90 interp_gp.F90 readmask.F90 updtim.F90 wrresf.F90 chavarin.F90 chavarinad.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_`

```
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
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metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
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```

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sbcblk_algo_coare.F90 sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_-
algo_ncar.F90 sbcblk_clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90
sbcice_lim_2.F90 sbcmod.F90 sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90
traldf.F90 tranxt.F90 trazdf.F90 trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_-
substitute.h90 zdfric.F90 zdftke.F90 zdftmx.F90 nemogcm.F90 step.F90 timing.F90
trc_oce.F90 daymod.F90 nemogcm.F90 par_age.F90 trcnam_age.F90 par_c14b.F90
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p4zmicro.F90 p4zrem.F90 p4zsbc.F90 p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90
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agrif_create_bathy.f90 agrif_readwrite.f90 compute_sections.f90 README dimension.cfg

dummy.cfg variable.cfg attribute.f90 create_bathy.f90 create_coord.f90 create_-
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griblsm.F90 gribtools.F90 oceaninput.F90 toolspar_kind.F90 nemopseudo.F90 nemopseudon
nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
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nemo.cfg coupsim.cfg coupsim.cfg tools.cfg dists_atm_to_simocn_gauss_1pts_-
cca.ksh dists_atm_to_simocn_gauss_4pts_cca.ksh dists_atm_to_simocn_gauss_-
oasis3_cca.ksh dists_simocn_gauss_to_atm_1pts_cca.ksh dists_simocn_gauss_-
to_atm_4pts_cca.ksh dists_simocn_gauss_to_atm_oasis3_cca.ksh remap_atm_to_-
simocn_gauss_1pt_cca.ksh remap_atm_to_simocn_gauss_4pt_cca.ksh remap_atm_-
to_simocn_gauss_oasis3_cca.ksh remap_simocn_gauss_to_atm_1pt_cca.ksh remap_-
simocn_gauss_to_atm_4pt_cca.ksh remap_simocn_gauss_to_atm_oasis3_cca.ksh simocngausst
cray_inner.ksh cray_mppcomb.ksh cray_outer.ksh getecfstestdata.ksh namelist.nemo.ORCA
Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_ORCA1_Z46 setup_namelist_outer_ORCA1_Z75 setup_namelist_outer_io setup_-
outer_data swan_inner.ksh swan_outer.ksh cray_outer.ksh getecfstestdata.ksh
field_def.xml field_def_xios2.xml iodef_default.xml iodef_default_xios2.xml
iodef_single_xios2.xml namelist_cfg.ORCA025_Z75 namelist_cfg.ORCA1_Z42 namelist_-
ice_cfg.ORCA025 namelist_ice_cfg.ORCA1 namelist_ref ompi_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_io setup_namelist_xios setup_outer_data CMakeLists.txt config.macports
Makefile config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90
config.cray ecatmosbufrdata.F90 ecbufrdata.F90 ecsstbufrdata.F90 Makefile config
gribdcoast.F90 griblsm.F90 griblsmwam.F90 gribtools.F90 config.macports Makefile
config griblsm.F90 gribthin.F90 gribtools.F90 index_sort.F90 nctools.F90 obs_-
fbm.F90 obs_utils.F90 toolspar_kind.F90 icecdamp.F90 config.cray config.crayomp
config.macports config.macportsomp config.opensuse131 config.opensuse131mpiomp
config.opensuse131omp getsst.F90 griblsm.F90 orca_grid.F90 remapfluxes.F90
remapsst.F90 remapsstgauss.F90 scripsst.F90 grid2kml kmlgrid.F90 kmlgridmod.F90
Makefile areadata.F90 config ctl_stop.h90 date_utils.F90 amona_go66go65_sfc.ksh
amona_go66go65_sfc_masked.ksh amona_go66go65_ua.ksh amona_go66go65_waves.ksh
omona_go66_1h.ksh omona_go66_3h.ksh plot_10lvls_potemp.ksh plot_lvls_air_-

temp.ksh plot_sst.ksh plot_sst_t2m.ksh plot_sst_t2m_masked.ksh plot_swh.ksh
retrieve_go66_20150901_ocean.ksh retrieve_go66go65_20150901_atmos_sfc.ksh retrieve_-
go66go65_20150901_atmos_ua.ksh retrieve_go66go65_20150901_atmos_wam.ksh README
amona_seas5.ksh omona_seas5.ksh plot_sst_seas5.ksh retrieve_seas5_20180301.ksh
README omona_oras4_sst_2017.ksh omona_oras5_sst_2017.ksh omona_ostia_sst_-
2017.ksh plot_sst_2017.ksh retrieve_oras4_sst_2017.ksh retrieve_oras5_sst_-
2017.ksh retrieve_ostia_sst_2017.ksh standard_areas.dat standard_omona.dat
greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90 index_sort.F90 jul2greg.h90
ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90 ncts_output.F90 ncts_stats.F90
ncts_timeseries.F90 nctsplot.F90 nctsprint.F90 netcdfinput.F90 omonadata.F90
omonatypes.F90 orca_grid.F90 spherepolygons.F90 toolspar_kind.F90 ddatetoymdhms.h90
greg2jul.h90 jul2greg.h90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
plotnemo plotobs plotobs.F90 plotpoints plotpoints.F90 plotpointsnc plotreg.F90
plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 bufrdata.F90 config.macports config.macportsomp
fbDesstat.F90 fbaddrename.F90 fbext2add.F90 fbmergedup.F90 fbstat.F90 fbsuperobfix.F9
fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90 ghrsstdata.F90 insi2pot.F90
osisaf2fb.F90 read_osisaf.h90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
coords.F90 config.macports

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (PREPDATA): fillgaussgrib.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Andrew Dawson - diad_CY45R2_pysuite_opa - BIT IDENTICAL

Port the opa experiment to ecFlow (IFS-452)

The opa suite (ocean analysis) should be ported to ecFlow.

Patrick Gillies, Kristian Mogensen - ne1_CY45R1_nemo_intel_optimisations - BIT IDENTICAL

NEMO OpenMP optimisations (IFS-549)

OpenMP optimisations from Intel.

Files modified (IFS): call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 updnemoocean.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 cnt4.F90 csekf2.F90 reresf.F90 hpos.F90 wrmlfp.F90 wrmlfp_io_serv.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iogride_mod.F90 iogridoe_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yoephy.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomcosjo.F90 yommcc.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 naephy.nam.h nammcc.nam.h namsekf.nam.h getnemodiag.F90 getnemodiag3d.F90 ininemo.F90 black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.
cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_-
layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_-
scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 master.F90 sekf_-
geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su0phy.F90 su_surf_flds.F90
suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sumcc.F90 supp.F90 dealsc2.F90
interp_gp.F90 readmask.F90 updtim.F90 wrresf.F90 chavarin.F90 chavarinad.F90
jbtomodel.F90 jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90

Files modified (NEMO): CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake
CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi
Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90

ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
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cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
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inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
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sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
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obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
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tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
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extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
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namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_-
ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90
diaar5.F90 diacfl.F90 diadct.F90 diahth.F90 diaprod.F90 diawri.F90 dommsk.F90
domzgr.F90 divcur.F90 dynhpg.F90 dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90
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lbclnk.F90 lib_mpp.F90 ldfslp.F90 ddatetoymdhms.h90 obs_grd_bruteforce.h90
obs_read_seaice.F90 obs_read_sst.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90
sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_-
clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90
sbcsglcpl.F90 solpcg.F90 eosbn2.F90 traadv.F90 traadv_eiv.F90 traadv_mle.F90
traadv_tvd.F90 trabbl.F90 tradmp.F90 traldf.F90 traldf_iso.F90 tranxt.F90 trazdf.F90
trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90
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c14b.F90 par_cfc.F90 trcini_cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_-
trc.F90 trcnam_my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90
p4zsbc.F90 p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90
trcdta.F90 trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_-
athena batch-ifort_athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90
agrif_readwrite.f90 compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg
attribute.f90 create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90
2_quickstart.md 5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_-
cdf.f90 merge_bathy.f90 mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam
Ops_OceanSuperob.f90 lapack.F compiler_flags_Cray_Fortran.cmake fcmcmake.ksh
fcmcsmake.ksh fcmnmake.ksh fcmsmake.ksh fcmxiosmake.ksh nemogcmcoup_exflds_-
get.F90 nemogcmcoup_lim2_update.F90 nemogcmcoup_mlflds_get.F90 nemogcmcoup_-
mlinit.F90 nemohth.F90 griblsm.F90 nemogribcoup.f90 nemogribcoupmpmd.f90 in_-
out_manager.F90 modhookdummy.F90 nctools.F90 nemogcmcoup_coupinit.F90 nemogcmcoup_-
coupinit_mpmd.F90 nemogcmcoup_end_ioserver.F90 nemogcmcoup_exflds_get.F90 nemogcmcoup
final.F90 nemogcmcoup_get.F90 nemogcmcoup_get_1way.F90 nemogcmcoup_get_mpmd.F90
nemogcmcoup_init.F90 nemogcmcoup_init_ioserver.F90 nemogcmcoup_init_ioserver_-
2.F90 nemogcmcoup_lim2_get.F90 nemogcmcoup_lim2_update.F90 nemogcmcoup_step.F90
nemogcmcoup_update.F90 nemogcmcoup_update_add.F90 nemogcmcoup_update_mpmd.F90
nemogcmcoup_wam_coupinit.F90 nemogcmcoup_wam_get.F90 nemogcmcoup_wam_update.F90

nemogcmcoup_wam_update_stress.F90 timing.F90 date_utils.F90 gribfluxes.F90
griblsm.F90 gribtools.F90 oceaninput.F90 toolspar_kind.F90 nemopseudo.F90 nemopseudor
nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
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nemo.cfg ioserver.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg ioserver.cfg
nemo.cfg coupsim.cfg coupsim.cfg tools.cfg dists_atm_to_simocn_gauss_1pts_-
cca.ksh dists_atm_to_simocn_gauss_4pts_cca.ksh dists_atm_to_simocn_gauss_-
oasis3_cca.ksh dists_simocn_gauss_to_atm_1pts_cca.ksh dists_simocn_gauss_-
to_atm_4pts_cca.ksh dists_simocn_gauss_to_atm_oasis3_cca.ksh remap_atm_to_-
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to_simocn_gauss_oasis3_cca.ksh remap_simocn_gauss_to_atm_1pt_cca.ksh remap_-
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cray_inner.ksh cray_mppcomb.ksh cray_outer.ksh getecfstestdata.ksh namelist.nemo.ORCA
Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_ORCA1_Z46 setup_namelist_outer_ORCA1_Z75 setup_namelist_outer_io setup_-
outer_data swan_inner.ksh swan_outer.ksh cray_outer.ksh getecfstestdata.ksh
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ice_cfg.ORCA025 namelist_ice_cfg.ORCA1 namelist_ref ompi_outer.ksh setup_-
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outer_io setup_namelist_xios setup_outer_data CMakeLists.txt config.macports
Makefile config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90
config.cray ecatmosbufrdata.F90 ecbufrdata.F90 ecsstbufrdata.F90 Makefile config
gribdcoast.F90 griblsm.F90 griblsmwam.F90 gribtools.F90 config.macports Makefile
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fbm.F90 obs_utils.F90 toolspar_kind.F90 icecdamp.F90 config.cray config.crayomp
config.macports config.macportsomp config.opensuse131 config.opensuse131mpiomp
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remapsst.F90 remapsstgauss.F90 scripsst.F90 grid2kml kmlgrid.F90 kmlgridmod.F90
Makefile areadata.F90 config ctl_stop.h90 date_utils.F90 amona_go66go65_sfc.ksh
amona_go66go65_sfc_masked.ksh amona_go66go65_ua.ksh amona_go66go65_waves.ksh
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go66go65_20150901_atmos_ua.ksh retrieve_go66go65_20150901_atmos_wam.ksh README
amona_seas5.ksh omona_seas5.ksh plot_sst_seas5.ksh retrieve_seas5_20180301.ksh
README omona_oras4_sst_2017.ksh omona_oras5_sst_2017.ksh omona_ostia_sst_-
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plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona

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Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90 get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90 varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (PREPDATA): fillgaussgrib.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F

Andrew Dawson - diad_CY45R2_for_46R1_v6_xios - BIT IDENTICAL

NEMOLIM versions should be configurable (IFS-580)

Since CY45R2 and the switch to ecBuild it is no longer possible to control which versions of NEMO and the LIM ice model get built. This is fixed by adding additional options to the CMake configuration to set the required (and already existing) variables to select NEMO/LIM configurations.

Andrew Dawson - diad_CY45R2_for_46R1_v6_xios - BIT IDENTICAL

Research experiments should be able to use XIOS (IFS-581)

The new ecBuild-based build system from CY45R2 does not interact nicely with the existing functionality to use XIOS with NEMO. This is fixed by adding an option to link the NEMO library with XIOS and provide the extra required pre-processor definitions when building the NEMO library.

Andrew Dawson - diad_CY45R2_default_lim2 - BIT IDENTICAL

An ice model should always be built when building NEMO (IFS-624)

An ice model should always be built when building NEMO as it is needed during linking. Previously we always chose LIM2. The extra configuration of the NEMO/LIM versions introduced by IFS-580 does not

handle this correctly and disables the build of LIM when no ice model is required at run time. We should pass nemo−ice−config=LIM2 to the bundle instead of nemo−ice−config=NONE when no ice model is selected.

Tomas Wilhelmsson, Peter Dueben - wab_CY45R2_for_46R1_v8_single_precision_fix - BIT IDENTICAL

bug fix for single precision (IFS-631)

Following interaction with Peter Dueben when testing CY46R1 in single precision model, I have made a proper fix for the problem with the call to NEMO from WAM in

wab_CY45R2_for_46R1_v8_single_precision_fix

this is a copy of nat_CY45R2_for_46R1_v8

the following routines have been modified

/wam/module/

yowmean.F90 yownemoflds.F90 yowcoup.F90

/wam/Wam_oper/

initnemocpl.F90 wavemdl.F90 wamodel.F90 updnemofields.F90 wrong_wnfluxes.F90 wnfluxes.F90

Files modified (AEOLUS): `arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_l2bp_primary_ec.F90`

Files modified (ALGOR): `minv.F90 minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_caller.h sgemmx.F90 m1qn3a.F90 butterfly_alg_mod.F90`

Files modified (ATLAS_APPS): `CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_module.F90`

Files modified (BL): `dynamic_symbols.c mf_blacklist.b`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake fieldman.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake prepdata.cmake satrad.cmake ssa.cmake target_ignore_missing_symbols.cmake trans.cmake wam.cmake`

Files modified (DUMMY): `aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_horiz_flt.F suefpbip.F sueinfce.F`

Files modified (ECFFTW): tpm_fftw.F90

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90

Files modified (FIELDMAN): FieldSet.hpp

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90 cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90 cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90 cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 fv_gradient.F90 gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90 gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90 gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90 gnhqe_tndlagadiab_gw.F90 gnhqe_tndlagadiab_svd.F90 gnhqe_xxd.F90 gnhsvd2gw.F90 gnhx.F90 gp_derivatives.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90 gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90 gpgw.F90 gphpre.F90 gpinislb.F90 gpmktend.F90 gpprs0d.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90 gprcph.F90 gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90 gpvcts.F90 gpvcw.F90 gpxx.F90 lacdyn.F90 lacdynad.F90 lacdynshw.F90 lacdynshwad.F90 lacdynshwtl.F90 lacdyntl.F90 ladad.F90 ladine.F90 ladinead.F90 ladinetl.F90 laitre_gfl_ad.F90 laitre_gmv.F90 lanhqesi.F90 lanhsi.F90 lanhsib.F90 lapinea.F90 lapinea5.F90 lapineaad.F90 lapineatl.F90 lapineb.F90 lapinebad.F90 lapinebtl.F90 larche.F90 larche5.F90 larche_incr.F90 larche_incr_ad.F90 larche_incr_tl.F90 larchead.F90 larchetl.F90 larcin2.F90 larcin2ad.F90 larcin2tl.F90 larcina.F90 larcinaad.F90 larcinatl.F90 larcinb.F90 larcinbad.F90 larcinha.F90 larcinhb.F90 larmes.F90 larmes5.F90 larmes_rk.F90 larmes_rk5.F90 larmes_rk_ad.F90 larmes_rk_tl.F90 larmesad.F90 larmestl.F90 lassie.F90 lassietl.F90 latte_bbc.F90 latte_kappa.F90 latte_kappaad.F90 latte_kappatl.F90 lattes.F90 lattesad.F90 lattestl.F90 lattex.F90 lavabo.F90 lavabotl.F90 lavent.F90 laventad.F90 laventtl.F90 postphy.F90 si_cccor.F90 sidd.F90 sigam.F90 silkap.F90 silkapi.F90 sinhqe_seve.F90 sinhqe_vderi.F90 siptp.F90 siqq.F90 siseve.F90 siskap.F90 siskapi.F90 sitnu.F90 spchor.F90 spcsi.F90 spnh_conv_nhvar.F90 spnh_conv_prhs.F90 spnhqesi.F90 spnhqesi_prodskap.F90 spnhsi.F90 tropo_tep.F90 aro_adjust.h aro_ground_diag.h aro_ground_diag_2isba.h aro_lima.h aro_rain_ice.h aroini_micro.h aroini_micro_lima.h aroini_nsv.h deello.intf eapply_pll_recf.intfb.h ebicli.intfb.h ebipos.intfb.h ecoupl1.intfb.h ecoupl1ad.intfb ecoupl2.intfb.h ecoupl2ad.intfb.h ecvargpad.intfb.h ecvargptl.intfb.h ediagb_psot.intfb.h efpfilter.intfb.h eincli1.intfb.h eincli10.intfb.h eincli2.intfb.h eincli3.intfb.h eincli4.intfb.h eincli5.intfb.h eincli6.intfb.h eincli7.intfb.h eincli8.intfb.h eincli9.intfb.h einflation_mean.intfb.h elarmesad.intfb.h elascaw.int elsac.intfb.h elsin0ta.intfb.h elswa3.intfb.h ereadsigmab.intfb.h ereadstd.intfb.h erlbc_post_req.intfb.h escaljgs.intfb.h eseimpls.intfb.h eseimplsad.intfb.h esetup_pll_recf.intfb.h eslextpol.intfb.h espcm.intfb.h espfp.intfb.h espnhqesi.intfb espnhqesi_prodskap.intfb.h etenc.intfb.h etransdir_nhconvprhs.intfb.h etransinv_mdl.intfb.h etransinv_nhconv.intfb.h etransinv_nhconvprhs.intfb.h euvcopy.intfb.h

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chem_n2o.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_diurnal.F90 mocage_-
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opendb.F90 revmatchupdb.F90 shuffle_odb.F90 store_enda.F90 update_ddr_odb.F90
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cva2.F90 forecast_error.F90 fpwrncf.F90 get_clinc.F90 gmassdiag.F90 gp_model.F90
gp_model_ad.F90 gp_model_heap.F90 gp_model_heap2.F90 gp_model_stack.F90 gp_-
model_tl.F90 iopack.F90 jmgfixer.F90 monfpos.F90 negfixer.F90 qmfixer.F90 qmfixer2.F9
reresf.F90 restart_cnt3.F90 scan2m.F90 scan2mad.F90 scan2mtl.F90 sim4d.F90
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fpspnorm.F90 grib_code_message.F90 inifaoutinfo.F90 ppclose.F90 ppflush.F90
ppopen.F90 ppstat.F90 preset_grib_template.F90 satsim.F90 sp2gpmcuf.F90 spmcuf.F90
spnorm.F90 spnormb.F90 suecfname.F90 sumddh.F90 sunddh.F90 suofname.F90 suppdate.F90
wrfld_fp.F90 wrfu.F90 wrgathflnm.F90 wrgrida.F90 wrgridall.F90 wrgridall_-
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fpfilter.F90 fpgeo.F90 fpgeophy.F90 fphalo.F90 fpintdyn.F90 fpintphy.F90 fpmodcfu.F90
fpmodprec.F90 fpmodxfu.F90 fpnilphy.F90 fposhor.F90 fposhorlag.F90 fposhorlagphy.F90
fposhorphy.F90 fpsampl.F90 fpsaturcap.F90 fpselezo.F90 fpspecfitg.F90 fpspnorms.F90
fptsa_dir.F90 fptsa_inv.F90 fpuv2kp.F90 fullpos_drv.F90 fullpos_precond.F90
getfplun.F90 gridfpos.F90 hpos.F90 hpos_cfu.F90 hpos_dyn.F90 hpos_xfu.F90 ini1wrfp.F9
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su4fpos.F90 sualfpos.F90 subfpos.F90 sufp_ctl.F90 sufpc.F90 sufpcfu.F90 sufpcip.F90
sufpclifname.F90 sufpcnt.F90 sufpconf.F90 sufpd.F90 sufpdata.F90 sufpdistrib.F90
sufpdyn.F90 sufpf.F90 sufpfields.F90 sufpfilters.F90 sufpfit.F90 sufpg.F90
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sufptr2.F90 sufptrans.F90 sufpusergeo.F90 sufpv.F90 sufpvert.F90 sufpvset_-
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suallr.F90 suallt.F90 suanebuf.F90 suecges.F90 suensmem.F90 suinep.F90 suineplap.F90
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wrchres.F90 writelct.F90 writeoba.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): comcha.h comdat.h comddh.h ctlarch.F ctldompf.F ctldomts.F
ctlzon.F decops2.F description_table.dat getarea.F getcom1.F getcom2.F getdom.F
getrec.F getreci.F getzon.F incdat.F invjul.F julday.F namus.h offset.F opone.F
param.h rearec.F suarch.F sucom.F sucom2.F swapts.F i_system.c facgrm.F90 fadgra.F90

fagote.F90 faieno.h falgra.h faquin.F90 grib_get_api_version.c bt.c cas.h drhook.h ec_mpi_finalize.intfb.h ec_rank_reorder.intfb.h isrchfltpv.body.h lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_mod.F90 fdbsubs_mod.F90 mpl_abort_mod.F90 mpl_allgatherv_mod.F90 mpl_arg_mod.F90 mpl_comm_split_mod.F90 mpl_end_mod.F90 mpl_gatherv_mod.F90 oml_mod.F90 rttov_const.F90 rttov_ec_mod.F90 sdl_mod.F90 sharedmem_mod.F90 yomlun_ifsaux.F90 cmpl_binding.F90 ddhrun.F faconvgrib.F90 splitps.F abor1.F90 dr_hook_util.F90 dr_hook_util_multi.F90 drhook.c endian.c env.c ifssig.c cxxdemangle.cc ec_meminfo.F90 ec_rank_reorder.F90 gentrbk.F90 linuxtrbk.c tabort.c

Files modified (IFSOBS): CMakeLists.txt History.txt VERSION.cmake config.sh README.md cat_dbase.md dbase_view_mod.md generate_docs.sh match_dbase.md CMakeLists.txt CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 netcdf_file_mod.F90 quicksort_mod.F90 dbase_factory_mod.F90 hdf_dbase_mod.F90 odb1_dbase_mod.F90 odb2_dbase_mod.F90 odbserver_dbase_mod.F90 dbase_kinds_mod.F90 dbase_view_mod.F90 CMakeLists.txt map_dbase_mod.F90 mapping_aux_funcs.F90 mapping_parser_mod.F90 mappings_mod.F90 match_dbase_mod.F90 partition_dbase_mod.F90 CMakeLists.txt cat_dbase.F90 match_dbase.F90 CMakeLists.txt nc_sample_map_dbase.cdl test_map_dbase_bufr_mapping.dat test_map_dbase_mapping.dat test_convert_dbase_odb1.sh test_cope_repartitioning.F90 test_dbase_performance.F90 test_dbase_view.F90 test_join_views.F90 test_ll.F90 test_match_dbase.sh test_overhead_odb2.F90 test_parallel_distribute.F90 test_quicksort.F90

Files modified (NEMO): CMakeLists.txt bal_vel.F90 diahth.F90 divcur.F90 dynhpg.F90 dynldf_bilap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 lib_mpp.F90 ldfslp.F90 obs_grd_bruteforce.h90 obs_types.F90 obssla_types.h90 solpcg.F90 eosbn2.F90 traadv.F90 traadv_tvd.F90 tradmp.F90 traldf_iso.F90 zdfddm.F90 zdfmxl.F90 zdftke.F90 zdftmx.F90 lib_fortran.F90 arch-IBM_EKMAN_INGV.fcm CMakeLists.t namelist_cfg CFCs_CDIAC.dat CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_ref makenemo modlinktomodel.F90 modutil.F90 limwri.F90 agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90 diaar5.F90 diacfl.F90 diadct.F90 diahth.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90 divcur.F90 dynhpg.F90 dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90 cla.F90 lbclnk.F90 lib_mpp.F90 ldfslp.F90 diaobs.F90 obs_conv.F90 obs_conv_constants_eos.h90 obs_conv_functions_eos.h90 obs_grd_bruteforce.h90 obs_oper.F90 obs_types.F90 obs_write.F90 obssla_types.h90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90 sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbccpl.F90 sbcflx.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcisf.F90 sbcmod.F90 sbcrnf.F90 sbcsglcpl.F90 sbcssr.F90 solpcg.F90 eosbn2.F90 traadv.F90 traadv_eiv.F90 traadv_mle.F90 traadv_tvd.F90 trabbl.F90 tradmp.F90 traldf.F90 traldf_iso.F90 tranxt.F90 trazdf.F90 trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90 zdftmx.F90 lib_fortran.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90 par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_cfc.F90 trcini_cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_trc.F90 trcnam_my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90 p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90 trcice.F90 trcini.F90

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sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90 create_-
bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam INSTALL.rst LICENSE
README-setup-configs README.rst arch-gfortran_athena_xios.fcm arch-ifort_-
athena.fcm arch-ifort_athena_debug.fcm arch-ifort_athena_tools.fcm arch-ifort_-
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HTML_latex2html.sh PDF_creation.sh build.sh clean.sh namelist_split.sh nam_-
asminc nam_dia25h nam_diaharm nam_diatmb nam_tide nam_vvl namagrif nambbc nambbl
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namcrs namctl namdct namdiu namdom namdrg namdrg_bot namdrg_top namdyn_adv
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namnc4 namobs namptr namrun namsbc namsbc_apr namsbc_blk namsbc_cpl namsbc_-
flx namsbc_iscpl namsbc_isf namsbc_rnf namsbc_sas namsbc_ssr namsbc_wave namsto
namtra_adv namtra_adv_mle namtra_dmp namtra_ldf namtra_ldfeiv namtra_qsr namtrd
namtsd namwad namzdf namzdf_gls namzdf_iwm namzdf_osm namzdf_ric namzdf_tke
Openwater_eb.png Thermal_properties.png albedo_cloud_correction.png albedo_-
dependencies.png Ice_scheme.pptx ice_cats.ai radiation_atm_ice_oce.pptx radiative_-
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Z31 namelist_ice_cfg.ORCA1 namelist_ice_cfg.ORCA2 namelist_ice_ref namelist_-
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atovs.F90 b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_gmi.F90 b2o_-
convert_grad.F90 b2o_convert_iasi.F90 b2o_convert_modisaer.F90 b2o_convert_-
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temp_hires.F90 b2o_convert_windprofiler.F90 b2o_crc.c calc_azim.F90 get_varindex.F90
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b2o_debug.h cmaio.h odb_assoc_cols.h odb_it_members.h odbcs.h calc_azim.h codb.c
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mod.F90 bator_ecritures_mod.F90 bator_impr_mod.F90 bator_init_mod.F90 bator_-
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Files modified (PREPDATA): eppes.F90 eppes_ini_vars.F90 eppes_version.h matutils.F90
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routine.F90 fillgaussgrib.F90 unbal_eda.F90 wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-

adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90 radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90 radiation_cloud_optics_data.F90 radiation_config.F90 radiation_delta_eddington.h radiation_flux.F90 radiation_gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90 radiation_tripleclouds_sw.F90 radiation_two_stream.F90

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calcemis_mw_k.F90 rttov_calcemis_mw_tl.F90 rttov_calcrad.F90 rttov_calcrad_-
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prof.F90 rttov_copy_opt_param.F90 rttov_copy_pccomp.F90 rttov_copy_prof.F90
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setup_profile.F90 rttov_dom_setup_profile_ad.F90 rttov_dom_setup_profile_-
k.F90 rttov_dom_setup_profile_tl.F90 rttov_dom_tl.F90 rttov_erfcx.F90 rttov_-
init_aux_prof.F90 rttov_init_ircld.F90 rttov_init_opt_param.F90 rttov_init_-
predictor.F90 rttov_init_prof.F90 rttov_init_rad.F90 rttov_init_sunglint.F90
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locpat_k.F90 rttov_locpat_tl.F90 rttov_mfasis.F90 rttov_mfasis_ad.F90 rttov_-
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profaux.F90 rttov_profaux_ad.F90 rttov_profaux_k.F90 rttov_profaux_tl.F90 rttov_-
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8.F90 rttov_setpredictors_8_ad.F90 rttov_setpredictors_8_k.F90 rttov_setpredictors_-
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k.F90 rttov_transmit_9_solar_tl.F90 rttov_transmit_ad.F90 rttov_transmit_-
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tl.F90 rttov_copy_scatt_prof.F90 rttov_eddington.F90 rttov_eddington_ad.F90
rttov_eddington_tl.F90 rttov_emis_retrieval.F90 rttov_hydro.F90 rttov_hydro_-
ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_-
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rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_
test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90
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mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_-
gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90
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pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_-
scale_cld_profile_inc.F90 rttov_scale_opt_param_inc.F90 rttov_scale_pccomp_-
inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_-
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fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_-
windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_-
bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_-
fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

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Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h surfws.h osm.cfg sppcflsad_mod.F90 sppcflstl_mod.F90 srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90 srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 suvexc_mod.F90 vexcs_mod.F90 vlamsk_mod.F90 vsurf_mod.F90 yos_exc.F90 callpar1s.F90 cpg1s.F90 dtforc.F90 incdat.F90 netcdf_utils.F90 rdfvar.F90 rdsupr.F90 sucst.F90 suct01s.F90 sudcdf.F90 sufcdf.F90 sugdi1s.F90 sugp1s.F90 suinif1s.F90 sulun1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90 wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 fcttim.h namct01s.h mpl_mod_ctl.F90

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mnintw.F mnintw.F90 mpabort.F mpabort.F90 mpbcastgrdfld.F mpbcastgrid.F mpbcastgrid.F
mpbcastintfld.F mpbcastintfld.F90 mpbcastsarin.F mpbcastsarin.F90 mpbcastscfld.F
mpclose_unit.F mpclose_unit.F90 mpcrtbl.F mpcrtbl.F90 mpdecomp.F mpdecomp.F90
mpdistribfl.F mpdistribfl.F90 mpdistribscfld.F mpdistribscfld.F90 mpexchng.F
mpexchng.F90 mpexchngsarin.F mpexchngsarin.F90 mpfldtoifs.F mpfldtoifs.F90
mpgatherbc.F mpgatherbc.F90 mpgatherersfile.F mpgatherersfile.F90 mpgatherfl.F
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out_onegrdpt.F out_onegrdpt.F90 out_onegrdpt_sp.F out_onegrdpt_sp.F90 outbc.F
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outunwamfield.F outunwamfield.F90 outunwamtest.F outunwamtest.F90 outwint.F90
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readfl.F90 readpre.F readpre.F90 readsarspec.F readsarspec.F90 readsat.F readsat.F90
readsta.F readsta.F90 readstress.F readstress.F90 readwgrib.F readwgrib.F90
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runwam.F90 saras.F saras.F90 savrest.F savspec.F savspec.F90 savstress.F savstress.F9
sbottom.F sbottom.F90 scosfl.F scosfl.F90 sdepthlim.F90 sdissip.F90 sdissip_-
ard.F90 sdissip_jan.F sdissip_jan.F90 sdiwbk.F sdiwbk.F90 se10mean.F se10mean.F90
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secondhh.F90 secondhh_gen.F secondhh_gen.F90 secspom.F secspom.F90 semean.F
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phi_hf.F90 tauhf.F taut_z0.F taut_z0.F90 threshhold.F threshhold.F90 timin.F
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wam_sorti.F90 wam_sortini.F90 wam_syminv.F wam_syminv.F90 wam_u2l1cr.F wam_-
u2l1cr.F90 wam_user_clock.F wam_user_clock.F90 wamadszidl.F wamadszidl.F90
wamassi.F wamassi.F90 wamcur.F wamcur.F90 wamendnemoio.F90 wamininemoio.F wamininemoi
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wvwaminit1.F wvwaminit1.F90 z0wave.F z0wave.F90 create_wam_library_cray create_-
wam_library_gnu extract_WAM_code readme run_bouint_workstation run_preproc.fine_-
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dotdc.intfb.h ersfile.intfb.h expand_string.intfb.h fdur.intfb.h femean.intfb.h
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fld2wam.intfb.h fldinter.intfb.h fndprt.intfb.h frcutindex.intfb.h fustar.intfb.h
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notim.intfb.h oifield.intfb.h onestepapart.intfb.h optint.intfb.h out_onegrdpt.intfb.
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yowwami.F yowwami.F90 yowwind.F yowwind.F90 yowwndg.F yowwndg.F90

Andrew Dawson - diad_CY46R1_fix_wm_tasks - BIT IDENTICAL

wm_sfc task fails due to incorrect field specification (IFS-643)

The wm_sfc task to compute weekly-means of surface fields fails because it is expecting an array of parameter ids with length 34 but only 32 parameters were inserted into the array. This is a simple count vs field inconsistency related to the change in [edad8cef184|https://git.ecmwf.int/users/diad/repos/ifs-scripts/commits/edad8cef184f1c4f7c6d0a number of fields should be changed to 32.

Patrick Gillies, Andrew Dawson, James Hawkes, Jean Bidlot, Michail Diamantakis, Peter Dueben - dipg_CY46R1.20190114_hanging_sp - BIT IDENTICAL

IFS hanging when using single precision (IFS-672)

[~rdpd] experienced 46R1 v8 hanging in SP: "When running 46R1_v8 in single precision Michail has found a problem with TCo1279 simulations (NPES=720, THREADS=6, NPES_IOSERVER=18). The model is running fine until it reaches step 168. It then stops with no crash and does not continue until the time of the job is running out. If NPES or THREADS is changed, the job is finishing with no problem."

The trace of the hanging job suggested that one process was waiting in outbs. Initially it was thought that this might be related to the WAM IO server. Modifying some WAM IO server options did not resolve the problem.

[~wab] then provided some code changes that should make the code more stable. Once these were applied the test was able to run to completion.

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (IFS): `fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 hpos.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 field_definitions.F90 field_gfl_wrapper.F90 iogride_mod.F90 parfpos.F90 surface_fields_mix.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 yom_grib_codes.F90 yomafn.F90 yomppc.F90 namafn.nam.h interchan_obserr_cor.F90 aer_phy3.F90 aer_src.F90 callpar.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 suorog.F90 supp.F90 mod_ini.F90 updtim.F90 suinfce.F90 sujbwavwri.F90`

Files modified (ODB): `b2o_amend.F90 b2o_decode.F90 get_varindex.F90 hdr.h b2o_internal.F90 varindex_module.F90`

Files modified (SATRAD): `mod_screen_1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F9`

Files modified (WAM): `mpcrtbl.F90 wgrib2fdb.F90`

Gabor Radnoti - wab_CY46R1_new_wave_parameters - BIT IDENTICAL

Use new parameter grib codes for the new wave parameters (IFS-683)

Modify source, scripts and prepIFS to use the newly released grib parameter numbers for the new parameters produced in CY46R1:

140098 WETA wave induced mean sea level correction m 140099 WRAF ratio of wave angular and frequency

width - 140100 WNSLC number of events in freak waves statistics - 140101 UTAUA U-component of atmospheric surface momentum flux N/m**2 140102 VTAUA V-component of atmospheric surface momentum flux N/m**2 140103 UTAUO U-component of surface momentum flux into ocean N/m**2 140104 VTAUO V-component of surface momentum flux into ocean N/m**2 140105 WPHIO Wave turbulent energy flux into ocean W/m**2 * source, scripts and ifs-defaults branches: wab_CY46R1_new_wave_parameters*

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (IFS): `fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 parfpos.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 aer_phy3.F90 aer_-src.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 suafn2.F90 suorog.F90 mod_ini.F90 updtim.F90 suinfce.F90 sujbwavwri.F90`

Files modified (ODB): `b2o_amend.F90 b2o_decode.F90 get_varindex.F90 hdr.h b2o_internal.F90 varindex_module.F90`

Files modified (SATRAD): `mod_screen_1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F90`

Files modified (WAM): `wgrib2fdb.F90`

Offline Surface

- Updates to the surface experiment type (IFS-563)

Joaquin Munoz Sabater, Souhail Boussetta - diab_CY45R2_ERA5L_osuite - BIT IDENTICAL

Updates to the surface experiment type (IFS-563)

Science improvements to offline surface model:

- updates to work with CY45R1 and CY45R2
- initial work on climatological field generation
- infrastructure for ERA5-Land

Overlay: /home/rd/daq/overlays/45r1/

This is a precursor to enabling ecFlow migration work for this experiment (IFS-463).

Files modified (IFS): `grib_mean.f90 link.f90`

Files modified (SURF): `fcsvdfs.h sppcfl_mod.F90 srfsn_lwimp_mod.F90 yos_flake.F90 callpar1s.F90 cpg1s.F90 dtforc.F90 netcdf_utils.F90 sudcdf.F90 sugdi1s.F90 suinif1s.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90 wrtdcdf.F90 yomgdi1s.F90 yomgf1s.F90`

System / Technical

- Introduce a new namelist item that is passed ultimately to vdftofdc.F90. Updates to passive EPPES Fortran routines. (IFS-609)
- Activate compilation of fieldman with cce/8.7.0 (IFS-550)
- Add bit-identity testing to AN suite (IFS-558)
- Add existing API documentation to Sphinx for ecFlow suites (IFS-534)
- Add missing clean_source_dirs task for pysuite (IFS-526)
- Add profiling tools to ifs scripts (IFS-324)
- Align EMOS and research suites (IFS-647)
- Allow single precision forecasts in longrange experiments (IFS-659)
- Allow wave model to use IO server (IFS-279)
- Always write defs to file (IFS-494)
- Automatic work-around for single precision SGEMM issues (IFS-640)
- Bit-identicality testing with “git ifstest” (IFS-431)
- Bounds error in Intel optimisations (IFS-573)
- Build additional NEMO(QC) tools for the OPA suite (IFS-546)
- Capability to build IFS with Intel compiler (IFS-530)
- Compilation for OSX (IFS-385)
- Dissemination of additional DDH point data to FMI (IFS-658)
- ELDA outputs ill-formed Model Level surface pressure level=1 (IFS-723)
- Eliminate symlinked suite tasks (IFS-648)
- Enforce a particular version of ecflow in the acceptance tests (IFS-496)
- Failure in suinfce (IFS-709)
- Fix Python test suites in v1 merge (IFS-540)
- Fix bug in msgpass_storeobs triggered in rare circumstances. (IFS-602)
- Fix getgrb for multi-leg EPS (IFS-584)
- Fix support for ocean GRIB parameters (IFS-632)
- Fix to longrange contribution (IFS-628)
- Fixes for longrange experiment type (IFS-520)
- Fortran Standard NaN trapping (IFS-510)
- IFS EPS fails in IFLUSHFDB when FDB_MPI_CACHE=yes (IFS-576)
- Improve pySuite documentation (IFS-612)
- Inclusion of default configuration files for operational configuration (IFS-585)
- Incorrect ens_fetch_fields trigger for ecflow 4.12 (IFS-751)
- Integrate ifs-bundle in FD’s metabuilder CI suite (IFS-565)
- Integrate operational DDH scripts and sources into IFS (IFS-516)
- Longrange experiment fixes for 46r1 (IFS-575)
- Longrange experiment type fails when run without ice model (IFS-668)
- MPL_ALLGATHERV can’t handle zero length send data (IFS-508)
- Make 0.5 degree wave model default for TCo319 eps_nemo (IFS-455)
- Make wam io-server work without FDB output (IFS-629)
- Making warm skin layer switch on depending on ocean vertical levels (IFS-578)
- Mirroring changes to SV&EDA menus in eps_nemo (IFS-579)
- NEMO archiving tasks incorrectly added for forecasts ¡ 72h (IFS-545)
- New PV level at 1.5 units (IFS-617)
- New near-surface height levels for wind outputs (IFS-616)
- OOPS 4DVAR suite tasks are incorrect (IFS-664)

- Optimise odb loading related tasks in operations (IFS-389)
- Optimise reading of eda error files (IFS-418)
- Port the eps_nemo experiment to ecFlow (IFS-294)
- Port the eps_sv experiment to ecFlow (IFS-461)
- Port the longrange experiment to ecFlow (IFS-454)
- Port the surface experiment to ecFlow (IFS-463)
- Port the wam experiment to ecFlow (IFS-453)
- Prevent external access to configuration parameters in pysuite (IFS-598)
- Proposed reduction of EDA forecast length to 12 hours (IFS-725)
- RAPS 18 (IFS-619)
- Resolution not checked correctly in longrange (IFS-654)
- Revert change from 16 to 24 bits per value for sea ice output (IFS-506)
- Revive simulated satellite images in 46R1 (IFS-625)
- Support I/O server in eps_nemo ecFlow (IFS-529)
- Support single precision in eps_nemo ecFlow suite (IFS-533)
- The LPARPERT configuration of eps_nemo is broken (IFS-433)
- The eps_nemo experiment fails in forced SST mode (IFS-430)
- The eps_nemo experiment fails when run with ocean turned off (IFS-409)
- The prepIFS eps_nemo technical test configurations are not correct (IFS-626)
- The wipefdb task can fail if it is run before fdb-wipe is built (IFS-519)
- Update generatingProcessIdentifier fields (IFS-614)
- Update scripts for changed namelist variables (IFS-560)
- Update the ecFlow version used for suite testing (IFS-604)
- Update the pysuite test definitions (IFS-553)
- Upgrade pyflow support library (IFS-525)
- Use FDB5 in eps_nemo (IFS-586)
- Use FDB5 in longrange experiment (IFS-593)
- Use FDB5 in offline wam (IFS-592)
- Use correct variable values in ecFlow definitions (IFS-527)
- Use the I/O server in eps_nemo experiments (IFS-429)
- bug in nemo output post-processing scripts in type longrange (IFS-675)
- eps_nemo fails when run without singular vector perturbations (IFS-717)
- erroneous intent for array arguments (IFS-583)
- nino_atmos task fails in longrange experiments (IFS-633)
- prepIFS “an” suite with coupled ocean doesn’t work with non-default FCLENGTH (IFS-737)

James Hawkes, Jean Bidlot - majh_CY45R2_for_CY46R1 - METEOROLOGICAL

Allow wave model to use IO server (IFS-279)

Notes:

- IO server can be disabled for the wave model using LWAM_USE_IO_SERV in wam namelist. Default is to use the IO server.
- The wave model has been significantly refactored in order to perform initialization before the IO server initializes (instead of during the first call to the wave model). See wvcouple_init_early in su0yomb.

- The IO server has been modified to include additional metadata for wave fields. See io_serv_wavemodel in yomio_serv for static metadata (exchanged at the beginning of the simulation) and iofldddesc_wavemodel in iofldddesc_mod for dynamic metadata (field descriptor). Various other metadata including additional grib templates and tags has also been added.
- io_serv_suiosctmpl has been modified to get wave model grib templates and call io_serv_suioctmpl_wam, which handles all static metadata setup – including local2global index mapping.
- outwspec splits into outwspec_io_serv when enabled, which calls the IO server API.
- outint splits into outint_io_serv when enabled, which calls the IO server API.
- wv_io_serv_rec is the IO server side of the wave model output, which performs GRIB encoding and various mappings associated with the wave model.
- wgribencode and wgrib2fdb have been refactored to avoid use of modules (which are not initialized on the IO server). Two wrappers (_io_serv and _model) are provided.

TODO:

- -Continue development of integrated parameter output with [˜wab].-
- -Test integrated parameters (grib_compare).-
- -Rebase to CY45R2 when available and test. Above changes were made with ecbuild in mind, therefore dependence on CY45R2.-
- Testing via PrepIFS.

Files modified (CMAKE): `enkf.cmake ifs.cmake odbport.cmake prepdata.cmake ssa.cmake wam.cmake`

Files modified (IFS): `cpedia.F90 updclie.F90 updnemoocean.F90 cnt4.F90 cprep3.F90 reresf.F90 fpgpnorm.F90 wrfld_fp.F90 wrgridall_map.F90 wrspeca_map.F90 fp_serv_sync.F90 hpos.F90 wrhfp.F90 wrmlfp.F90 wrmlfp_io_serv.F90 wrplfp_io_serv.F90 io_serv_free_req.F90 io_serv_get_req.F90 io_serv_get_req_ready.F90 io_serv_get_reqid.F90 io_serv_grok_nproc.F90 io_serv_hdr1_init.F90 io_serv_hdr2_init.F90 io_serv_inc.F90 io_serv_make_chunks.F90 io_serv_map_recv_part1.F90 io_serv_map_recv_part2.F90 io_serv_map_send_part1.F90 io_serv_map_send_part2.F90 io_serv_prepacka1_compress.F90 io_serv_read_send.F90 io_serv_reclaim_buf_space.F90 io_serv_recv_cleanup.F90 io_serv_recv_req.F90 io_serv_recv_sort.F90 io_serv_recv_term.F90 io_serv_req_done.F90 io_serv_run_ec.F90 io_serv_send_dist.F90 io_serv_send_read.F90 io_serv_send_sort.F90 io_serv_setup_fa.F90 io_serv_suiosctmpl.F90 io_serv_sync.F90 io_serv_wrgp2fa_compress.F90 io_serv_write.F90 io_serv_write_ec.F90 io_serv_writefld_ec.F90 io_serv_wrspeca_compress.F90 iofldddesc_mod.F90 iogride_mod.F90 iogridoe_mod.F90 surface_fields_mix.F90 yoephy.F90 yoewcou.F90 yom_grib_codes.F90 yomafn.F90 yomcosjo.F90 yomio_serv.F90 yomio_serv_hdr.F90 yomio_serv_req.F90 yommcc.F90 naephy.nam.h nammcc.nam.h getnemodiag.F90 getnemodiag3d.F90 ininemo.F90 postphy_layer.F90 wv_io_serv_rec.F90 wv_io_serv_suiosctmpl.F90 wv_wgribencode_io_serv.F90 wvcouple.F90 wvcouple_init_early.F90 wvcouple_update_grib_handles.F90 wvxf2gb.F90 master.F90 su0phy.F90 su0yomb.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugridua_map_part1.F90 sumcc.F90 suspeca_map_part1.F90 readmask.F90 wrresf.F90`

Files modified (NEMO): `diahth.F90 zdfmxl.F90 arch-IBM_EKMAN_INGV.fcm namelist_cfg CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref`

namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_-
ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90
diaar5.F90 diacfl.F90 diadct.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90
cla.F90 lbclnk.F90 lib_mpp.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90
sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_-
clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90
sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90 traldf.F90 tranxt.F90 trazdf.F90
trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90
zdftmx.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90
par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_-
cfc.F90 trcini_cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_trc.F90 trcnam_-
my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90
p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90
trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort
athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90
compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90
create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam fcmcmake.ksh fcmcsmake.ksh
fcmnmake.ksh fcmsmake.ksh fcmxiosmake.ksh nemogcmcoup_exflds_get.F90 nemogcmcoup_-
lim2_update.F90 nemogcmcoup_mlflds_get.F90 nemogcmcoup_mlinit.F90 nemohth.F90
griblsm.F90 nemogribcoup.f90 nemogribcoupmpmd.f90 in_out_manager.F90 modhookdummy.F90
nctools.F90 nemogcmcoup_coupinit.F90 nemogcmcoup_coupinit_mpmd.F90 nemogcmcoup_-
end_ioserver.F90 nemogcmcoup_exflds_get.F90 nemogcmcoup_final.F90 nemogcmcoup_-
get.F90 nemogcmcoup_get_1way.F90 nemogcmcoup_get_mpmd.F90 nemogcmcoup_init.F90
nemogcmcoup_init_ioserver.F90 nemogcmcoup_init_ioserver_2.F90 nemogcmcoup_-
lim2_get.F90 nemogcmcoup_lim2_update.F90 nemogcmcoup_step.F90 nemogcmcoup_-
update.F90 nemogcmcoup_update_add.F90 nemogcmcoup_update_mpmd.F90 nemogcmcoup_-
wam_coupinit.F90 nemogcmcoup_wam_get.F90 nemogcmcoup_wam_update.F90 nemogcmcoup_-
wam_update_stress.F90 timing.F90 date_utils.F90 gribfluxes.F90 griblsm.F90
gribtools.F90 oceaninput.F90 toolspar_kind.F90 nemopseudo.F90 nemopseudompmd.F90
nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
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nemo.cfg ioserver.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg ioserver.cfg
nemo.cfg coupsim.cfg coupsim.cfg tools.cfg dists_atm_to_simocn_gauss_1pts_-
cca.ksh dists_atm_to_simocn_gauss_4pts_cca.ksh dists_atm_to_simocn_gauss_-
oasis3_cca.ksh dists_simocn_gauss_to_atm_1pts_cca.ksh dists_simocn_gauss_-
to_atm_4pts_cca.ksh dists_simocn_gauss_to_atm_oasis3_cca.ksh remap_atm_to_-
simocn_gauss_1pt_cca.ksh remap_atm_to_simocn_gauss_4pt_cca.ksh remap_atm_-
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simocn_gauss_to_atm_4pt_cca.ksh remap_simocn_gauss_to_atm_oasis3_cca.ksh simocngausst
cray_inner.ksh cray_mppcomb.ksh cray_outer.ksh getecfstestdata.ksh namelist.nemo.ORCA
Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
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outer_ORCA1_Z46 setup_namelist_outer_ORCA1_Z75 setup_namelist_outer_io setup_-
outer_data swan_inner.ksh swan_outer.ksh cray_outer.ksh getecfstestdata.ksh

field_def.xml field_def_xios2.xml iodef_default.xml iodef_default_xios2.xml
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ice_cfg.ORCA025 namelist_ice_cfg.ORCA1 namelist_ref ompi_outer.ksh setup_-
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outer_io setup_namelist_xios setup_outer_data config.macports Makefile config
diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90 config.cray ecatmosbufr
ecsstbufrdata.F90 Makefile config gribdcoast.F90 griblsm.F90 griblsmwam.F90
gribtools.F90 config.macports Makefile config griblsm.F90 gribthin.F90 gribtools.F90
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config.cray config.crayomp config.macports config.macportsomp config.opensuse131
config.opensuse131mpiomp config.opensuse131omp getsst.F90 griblsm.F90 orca_-
grid.F90 remapfluxes.F90 remapsst.F90 remapsstgauss.F90 scripsst.F90 grid2kml
kmlgrid.F90 kmlgridmod.F90 Makefile areadata.F90 config ctl_stop.h90 date_-
utils.F90 amona_go66go65_sfc.ksh amona_go66go65_sfc_masked.ksh amona_go66go65_-
ua.ksh amona_go66go65_waves.ksh omona_go66_1h.ksh omona_go66_3h.ksh plot_-
10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh plot_-
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go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
oras5_sst_2017.ksh omona_ostia_sst_2017.ksh plot_sst_2017.ksh retrieve_oras4_-
sst_2017.ksh retrieve_oras5_sst_2017.ksh retrieve_ostia_sst_2017.ksh standard_-
areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
netcdfinput.F90 omonadata.F90 omonatypes.F90 orca_grid.F90 spherepolygons.F90
toolspar_kind.F90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
plotnemo plotobs plotobs.F90 plotpoints plotpoints.F90 plotpointsnc plotreg.F90
plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 config.macports config.macportsomp fbaddrename.
fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
config.macports

Files modified (PREPDATA): fillgaussgrib.F90

Files modified (SURF): surf_inq.F90 surf_inq.h srfsn_lwimp_mod.F90 suvexc_mod.F90
yos_exc.F90

Files modified (WAM): abort1.F abort1.F90 adjust.F adjust.F90 airsea.F airsea.F90
aki.F aki.F90 altas.F90 buildstress.F cal_second_order_spec.F cal_second_-
order_spec.F90 check.F check.F90 cimsstrn.F cireduce.F clean_outbs.F create_-
wam_bathymetry_ETOPO1.F current2wam.F femean.F fkmean.F frcutindex.F get_-

preset_wgrib_template.F90 getcurr.F getspec.F grdata.F grdata.F90 grfield.F90
grib2wgrid.F h_max.F h_max.F90 imphftail.F90 implsch.F initmdl.F iniwcst.F
intpol.F kurtosis.F kurtosis.F90 makegrid.F meansqs.F mpbcastsarin.F mpcrtbl.F
mpdecomp.F mpgatherspp.F mpmdl4alt.F90 mpminmaxavg.F90 mppewithindist.F mppewithindis
mpuserin.F mwp1.F mwp2.F notim.F oifield.F oifield.F90 out_onegrdpt.F out_-
onegrdpt_sp.F out_onegrdpt_sp.F90 outblock.F90 outbs.F outbs.F90 outgrid.F
outint.F outint.F90 outint_io_serv.F90 outsetwmask.F90 outspec.F90 outspp.F
outwint.F90 outwnorm.F outwnorm.F90 outwpsp.F90 outwspec.F outwspec.F90 outwspec_-
io_serv.F90 peak_ang.F90 peak_freq.F peak_freq.F90 preproc.F preset.F readsarspec.F
rfl4wam.F90 runwam.F sbottom.F sdepthlim.F90 sdissip.F90 sdissip_ard.F90 sdiwbk.F
secspom.F sep3tr.F sepwisw.F set_wflags.F set_wflags.F90 setice.F setwmask.F
sinput.F90 sinput_ard.F90 stat_nl.F90 stresso.F tauhf.F taut_z0.F topoar.F
transf2.F transf_bfi.F90 transf_r.F90 transf_snl.F90 unsetice.F updatewd.F
userin.F w_cdf.F90 w_cdfmax.F90 w_pdf.F90 w_pmax.F90 wam2odb.F90 wam_nproma.F90
wamassi.F wamcur.F wamnorm.F wamodel.F wamoi.F wamoi.F90 wavemdl.F wdfluxes.F
wdirspread.F weflux.F wgrib2fdb.F wgribencode.F wgribencode.F90 wgribencode_-
model.F90 wgribenout.F wgribenout.F90 wgribout.F wnfluxes.F wsmfen.F wvdealloc.F
wvwaminit.F abort1.intfb.h adjust.intfb.h airsea.intfb.h aki.intfb.h cireduce.intfb.h
get_preset_wgrib_template.intfb.h getspec.intfb.h grdata.intfb.h grfield.intfb.h
h_max.intfb.h imphftail.intfb.h kurtosis.intfb.h makegrid.intfb.h mpminmaxavg.intfb.h
mppewithindist.intfb.h mwp1.intfb.h mwp2.intfb.h oifield.intfb.h out_onegrdpt_-
sp.intfb.h outblock.intfb.h outbs.intfb.h outgrid.intfb.h outint.intfb.h outint_-
io_serv.intfb.h outsetwmask.intfb.h outspec.intfb.h outwint.intfb.h outwnorm.intfb.h
outwpsp.intfb.h outwspec.intfb.h outwspec_io_serv.intfb.h peak_ang.intfb.h
peak_freq.intfb.h sbottom.intfb.h sdepthlim.intfb.h sdiwbk.intfb.h sepwisw.intfb.h
set_wflags.intfb.h stat_nl.intfb.h tauhf.intfb.h updatewd.intfb.h wam2odb.intfb.h
wam_nproma.intfb.h wamcur.intfb.h wamnorm.intfb.h wamoi.intfb.h wavemdl.intfb.h
wdirspread.intfb.h weflux.intfb.h wgrib2fdb.intfb.h wgribencode.intfb.h wgribencode_-
model.intfb.h wgribenout.intfb.h wnfluxes.intfb.h wv_io_serv_rec.intfb.h coupling_-
var.F90 output_struct.F90 pgmcl_lib_wam.F90 unstruct_bound.F90 unstruct_curr.F90
unstruct_wind.F90 unwam.F90 wav_netcdf.F90 wav_netcdf_fct.F90 wav_netcdf_-
var.F90 yow_rank_gloloc.F90 yowaltas.F yowaltas.F90 yowchecksmodule.F90 yowcoup.F
yowcoup.F90 yowcout.F yowcurr.F yowdatapool.F90 yowelementpool.F90 yowerror.F90
yowexchangeModule.F90 yowfred.F yowgrib_handles.F yowice.F yowintp.F yowmean.F
yownemop.F yownodepool.F90 yowpcons.F yowpdlibmain.F90 yowrankModule.F90 yowshal.F
yowsidepool.F90 yowstat.F yowunit.F yowwind.F

Andrew Dawson, Simon Lang - diad_CY45R2_pysuite_eps_nemo - BIT IDENTICAL

Port the eps_nemo experiment to ecFlow (IFS-294)

Creation of Python code to generate an ecFlow suite for the eps_nemo (and possibly sv) experiment type through prepIFS.

Patrick Gillies - dipg_CY45R1_performance_tools - BIT IDENTICAL

Add profiling tools to ifs scripts (IFS-324)

Add options to the IFS scripts to easily enable the profiling tools MAP and Extrae.

Willem Deconinck - nawd_CY45R2_fixes - BIT IDENTICAL

Compilation for OSX (IFS-385)

The build of IFS on OSX is broken. This may not seem required for running IFS, but parts of IFS (ifsaux, trans) are used by MIR and MARS and have to be more portable.

Files modified (BL): `dynamic_symbols.c`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake dummy.cmake ifsaux.cmake oopsifs.cmake prepdata.cmake satrad.cmake target_ignore_missing_symbols.cmake trans.cmake`

Files modified (FIELDMAN): `FieldSet.hpp`

Files modified (IFS): `fpgpnorm.F90 fields_base_mod.F90 fields_mod.F90 type_geometry.F90 type_model.F90 type_spgeom.F90`

Files modified (IFSAUX): `i_system.c ec_mpi_finalize.intfb.h lfi_altm.c mpl_end_mod.F90 abor1.F90 drhook.c env.c ifssig.c ec_meminfo.F90`

Files modified (IFSOBS): `CMakeLists.txt hdf5_file_mod.F90`

Files modified (ODB): `CMakeLists.txt cma_open.c odb_target_ignore_missing_symbols.cmake cmaio.h codb.c twindow.c`

Files modified (OOPSIFS): `CMakeLists.txt`

Files modified (PREPDATA): `chgrib.c`

Files modified (TRANS): `dealloc_resol_mod.F90`

Tomas Kral - datk_CY45R2_cope_mpi - BIT IDENTICAL

Optimise odb loading related tasks in operations (IFS-389)

In particular the cope related tasks in current operations (cope_obgroup) could be parallelized better.

Dependencies: cope 0.7.0, ecbuild 2.9 (in my ifs-bundle branch)

Andrew Dawson - diad_CY45R1_eps_nemo_uncoupled_fix - BIT IDENTICAL

The eps_nemo experiment fails when run with ocean turned off (IFS-409)

The eps_nemo experiment type will fail (in scripts) if you run it with ocean coupling turned off. This is because

the gen/modeleps_nemo script relies on the variable $restarts which is defined in chunk.h, but the task wrapper sms/modeleps_nemo.sms will only include chunk.h if coupling is turned on.

There are two obvious solutions to the problem:

14 always include `chunk.h` in the `sms/modeleps_nemo.sms` task wrapper

15 set a default value for `$restarts` in the `gen/modeleps_nemo` script

I think option 1 should be preferred unless there is a good reason not to always include chunk.h, and consider option 2 as the fallback.

Patrick Gillies - dipg_CY45R1_optimise_eda_error_reads - BIT IDENTICAL

Optimise reading of eda error files (IFS-418)

The eda error files errgrib and eda_spread_grib are currently read in serial on the master process, then broadcast to all other processors. To reduce the time taken the files are split by parameter allowing the files to be read in parallel by a different processor before being broadcast.

Files modified (ENKF): `obs_constants.F90`

Files modified (IFS): `call_sl.F90 cpedia.F90 fv_gradient.F90 gp_derivatives.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 grib_code_message.F90 hpos.F90 sufpgrib.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 sats_mix.F90 surface_fields_mix.F90 varbc_rad.F90 varbc_to3.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yomgrib.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 blinit.F90 defrun.F90 gefger.F90 inifger.F90 level1cgeos_ob.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 co2slicing.F90 co2slicing_ml.F90 departure_jo.F90 hinth.F90 hretr_rad.F90 hsatang.F90 rad1cemis.F90 radtr_ml.F90 aer_phy3.F90 callpar.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 vdfouter.F90 wvxf2gb.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 sugrib.F90 suorog.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 suinfce.F90 sujbwavelet_stdevs.F90`

Files modified (IFSAUX): `abor1.intfb.h mpl_allgatherv_mod.F90 mpl_comm_split_mod.F90 mpl_gatherv_mod.F90 abor1.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompiFortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c`

```
a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_-
tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake
compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_-
Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake
compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_-
flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance
TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova
TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc
ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90
AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
```

dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90
obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): obstat_def.F90 inisoftdef.F90 plotsoft.F90 updsoft.F90 writegridsta
writescat.F90 writesoft.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
b2o_convert_atms.F90 b2o_convert_msg.F90 b2o_convert_mwri_1d.F90 get_varindex.F90
sufger_aeolus.sql aeolus.h black_robody_4.sql cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (SATRAD): getcparam.h mod_cparam.F90 mwave_const.F90 mwave_get_rtcoeff.F90
mwave_obsop_rttov.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 gensatim.F90
rttov_read_ascii_sccldcoef.F90 rttov_read_coefs.F90 co2cld.F90 getcparam.F90

`rttov_ec.F90 rttov_ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90`

Files modified (SSA): `setcomssa.F90`

Files modified (WAM): `altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F wgribenout.F wgribout.F yowcoup.F`

Zak Kipling - cxzk_CY45R1_bit-id - BIT IDENTICAL

Bit-identicality testing with "git ifstest" (IFS-431)

I have an initial implementation of a mechanism for testing that changes relative to a baseline are bit-identical (so far as the SP and GP norms produced in the ifs−test cases are concerned).

This is on my cxzk_CY45R1_bit−id branch of the ifs−test repository.

It's implemented via a hook function ifstest_check_norms_bit_identical defined in ifs−run and called from all postprocessing scripts where it makes sense. (A separate utility script might be better than a shell function, but I'm not sure where to put it so that it will be in the PATH when postprocessing runs.)

It's controlled via the environment variable IFS_TEST_BITIDENTICAL, which can take the following values:

||IFS_TEST_BITIDENTICAL setting||Meaning|| |0\|no\| false \| off (default if unset)|do nothing| |1\|yes\| true \|on\|check| against previously saved norms| |2\| init |generate and save norms for baseline case|

When used in "init" mode (typically at a known-good start point of a branch), a SAVED_NORMS file is generated in each test's runtime directory; in "check" mode, a NORMS file is generated, and compared against the previous SAVED_NORMS.

I'm sure the details can be cleaned up a bit, but this seems to work quite well for me so far in tracking down accidental non-bit-identical changes (either incrementally during development, or retrospectively via git bisect), although obviously there's plenty of scope for such effects to be visible only on the Cray, at higher resolution or in configurations (e.g. full "an" experiment) that aren't covered by ifs−test.

Andrew Dawson, Simon Lang - diad_CY45R1_eps_nemo_ioserver - BIT IDENTICAL

Use the IO server in eps_nemo experiments (IFS-429)

The I/O server should be available for eps_nemo experiments. This will require changes to the modeleps_nemo script as well as the eps_nemo.def suite definition and the prepIFS menus for the eps_nemo experiment type.

Andrew Dawson, Frederic Vitart - diad_CY45R1_eps_nemo_fix_lsst - NON-METEOROLOGICAL

The eps_nemo experiment fails in forced SST mode (IFS-430)

Running an eps_nemo experiment with ocean coupling turned off and selecting CLMSST mode (LSST=1)

causes the suite to fail in the getobsSST task due to a mismatch of GRIB edition between some files it has created and fields in a climate file.

This can be fixed by converting the lsmoro file to GRIB edition 1 before calling intsst in gen/ getobssst . However, it was suggested that the way this interpolation is handled should be modified to use the same approach taken in the seasonal forecast which avoids some interpolation artefacts.

Andrew Dawson - diad_CY45R1_lparpert_fixes - BIT IDENTICAL

The LPARPERT configuration of eps_nemo is broken (IFS-433)

The parameter perturbation research mode for the eps_nemo experiment is broken. The executable used to derive the new parameters eppes_routine .bin fails to read the required input files.

This error occurs because the code in prepdata/module/matutils .F90 uses unit 101 for file i/o, but the cray compiler reserves this unit for stdout (suggesting that this configuration has never worked on the Cray...).

Source branch diad_CY45R1_lparpert_fixes provides the required changes to fix.

Files modified (IFS): `call_sl.F90 cpedia.F90 lattex.F90 postphy.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 updclie.F90 ctxinitdb.F90 getdb.F90 update_obsdb.F90 cnt3_glo.F90 csekf2.F90 hpos.F90 field_definitions.F90 fields_mod.F90 grib_utils_mod.F90 iostream_mix.F90 surface_fields_mix.F90 yom_grib_codes.F90 yom_ygfl.F90 yomafn.F90 yommwave.F90 yomppc.F90 yomsekf.F90 mwave_emis.F90 mwave_setup.F90 namsekf.nam.h black.F90 defrun.F90 gefger.F90 new_thinn.F90 pre_thinner.F90 thin_red_presort.F90 departure_jo.F90 hinth.F90 radtr_ml.F90 chem_main_layer.F90 climaer_layer.F90 cuadjtqs.F90 cuadjtqsad.F90 cuadjtqstl.F90 cumastrn.F90 diag_clouds.F90 ec_phys.F90 ghg_main.F90 postphy_layer.F90 su_aerp.F90 vdfexcusad.F90 vdfexcustl.F90 vdfmain.F90 radiation_scheme.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_layer.F90 sekf_geteda_jacobians.F90 sm_ekf_main.F90 susekf.F90 su_surf_flds.F90 suafn1.F90 suafn2.F90 suafn3.F90 sugfl1.F90 sugfl2.F90 supp.F90 dealsc2.F90 interp_gp.F90 updtim.F90 chavarin.F90 chavarinad.F90 jbtomodel.F jbtomodelad.F90 pregprh.F90 sujbwavelet_stdevs.F90`

Files modified (NEMO): `CMakeLists.txt CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompi Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeCCompiler.cmak CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem. CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake CMakeLists.txt TestErrorCovariance TestGeometry.cc TestIncrement.cc TestLinearModel.cc TestLocations.cc TestObsErrorCova TestObservationSpace.cc TestObservationVector.cc TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc AllObsCovNV.h AllObsCovNV.interface.F90`

AllObsNV.cc AllObsNV.h AllObsNV.interface.F90 AllObsTLADnv.cc AllObsTLADnv.h
AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovariance3dNV.cc ErrorCovariance3dNV.
ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90 FieldsNV.cc FieldsNV.h
FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h GeometryNV.interface.F9
GomDataNV.cc GomDataNV.h GomDataNV.interface.F90 GomsNV.h IncrementNV.cc IncrementNV.
LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc LocalizationMatrixNV.h
LocationsNV.cc LocationsNV.h LocationsNV.interface.F90 ModelBiasCovarianceNV.h
ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h ObsBiasCovarianceNV.h
ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h ObsSpaceNV.interface.F90
ObsSpaceNV.subinterface.F90 ObsTrajNV.h ObsVecNV.cc ObsVecNV.h ObsVecNV.interface.F90
RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h VariablesNV.cc VariablesNV.h
VariablesNV.interface.F90 instantiateTlmFactory.h linkedList.F90 linkedList.interface
nv_init_wrapper.F90 CMakeLists.txt .3dfgat.json.swp 3dfgat.json 3dfgat.json.save
4dsaddle.json interfaces.json interfaces.json.save asm_ctl_def.F90 asminc_-
tam.F90 inc.F90 inc_def.F90 bal.F90 bal_ctl_def.F90 bal_def.F90 bal_eos.F90
bal_mat.F90 bal_nam.F90 bal_opt.F90 bal_opt_tst.F90 bal_sal.F90 bal_sol.F90
bal_sol_sup.F90 bal_ssh.F90 bal_ssh_mat.F90 bal_ssh_sol.F90 bal_ssh_sol_sup.F90
bal_sup.F90 bal_typ.F90 bal_vel.F90 bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_-
ens.F90 bge_cov_eof.F90 bge_cov_mod.F90 bge_cov_tst.F90 bge_ctl_def.F90 bge_-
ctlvec_def.F90 bge_def.F90 bge_ens.F90 bge_eof.F90 bge_fil.F90 bge_mod.F90
bge_nam.F90 bge_nam_ens.F90 bge_nam_eof.F90 bge_nam_extra.F90 bge_nam_fil.F90
bge_nam_mod.F90 bge_nam_tools.F90 bge_ran.F90 bge_ran_hyb.F90 bge_ran_mod.F90
bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_def.F90 jb_def.F90 tru_cov.F90
cor.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cor_nor_ana.F90 cor_nor_exa.F90
cor_nor_ran.F90 cor_ens.F90 cor_mod.F90 cor_nor.F90 cov.F90 cov_cor_dif.F90
cov_def.F90 cov_ens.F90 cov_mod.F90 cov_sdv.F90 dif.F90 dif_drivers.F90 dif_-
mat.F90 dif_msk.F90 dif_sol_drivers.F90 dif_sol_sup.F90 dif_sup.F90 dif_ten.F90
sha.F90 dfi.F90 dfi_ctl.F90 dfi_def.F90 dia_cost.F90 dia_cost_def.F90 dia_-
opt.F90 dif.F90 dif_mat.F90 dif_msk.F90 dif_opt.F90 dif_opt_exp.F90 dif_opt_-
imp.F90 dif_sol_cbv.F90 dif_sol_dia_exa.F90 dif_sol_eig.F90 dif_sol_eig_ana.F90
dif_sol_eig_dia.F90 dif_sol_eig_pow.F90 dif_sol_eig_riz.F90 dif_sol_ns_cbv.F90
dif_sol_pcg.F90 dif_sol_prc.F90 dif_sup.F90 dif_ten.F90 sha.F90 closea.F90
coast.F90 daymod.F90 dom_oce_def.F90 domain.F90 domcfg.F90 domhgr.F90 dommsk.F90
domngb.F90 domstp.F90 domwri.F90 domzgr.F90 grid_def.F90 gridrandom.F90 gridsum.F90
metrics.F90 par_oce.F90 phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_-
dia.F90 ens_fil.F90 ens_inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90
ens_ten.F90 ens_typ.F90 ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_-
nam.F90 eof_stats.F90 in_out_manager.F90 iom.F90 iom_def.F90 iom_ioipsl.F90
iom_nf90.F90 iom_rstdimg.F90 restart.F90 grid_mppini.F90 lbclnk.F90 lbcnfd.F90
lib_mpp.F90 lib_mpp_def.F90 mpp_var.F90 mppallgatherv.F90 mppbroadcast.F90
mppini.F90 mppsum.F90 lbclnk_tam.F90 lbcnfd_tam.F90 lib_mpp_tam.F90 lib_mpp_-
tam_def.F90 cgmod.F90 congrad.F90 control_vectors.F90 dia_res.F90 driver_-
cgmod.F90 driver_congrad.F90 driver_rpcg.F90 gen_opt.F90 min_restart.F90 obs_-
vec.F90 rpcg.F90 sim_var.F90 tst_cgmod.F90 tst_congrad.F90 tst_rpcg.F90 variables.F90
jo_def.F90 obe_cov.F90 obe_cov_def.F90 obe_sdv.F90 obe_sdv_ctl_def.F90 obe_-
sdv_def.F90 obe_sdv_nam.F90 index_sort.F90 julian.F90 mpp_map.F90 obs_coast.F90
obs_const.F90 obs_conv.F90 obs_fbm.F90 obs_grid.F90 obs_inter_h2d.F90 obs_-
inter_h2d_z1d.F90 obs_inter_sup.F90 obs_inter_z1d.F90 obs_interp_fromfield.F90

obs_mpp.F90 obs_oper.F90 obs_prep.F90 obs_profiles_def.F90 obs_qcinn.F90 obs_-
read_altbias.F90 obs_read_prof.F90 obs_read_surf.F90 obs_readmdt.F90 obs_-
rot_vel.F90 obs_rotation.F90 obs_sgl.F90 obs_sla_tools.F90 obs_sort.F90 obs_-
sstbias.F90 obs_surf_def.F90 obs_types.F90 obs_utils.F90 obs_write.F90 diaobs_-
tam.F90 locations.F90 modelAtLocations.F90 obs_inc.F90 obs_inter_h2d_tam.F90
obs_inter_h2d_z1d_tam.F90 obs_inter_z1d_tam.F90 obs_oper_tam.F90 obs_tan.F90
obsbias.F90 observer_tan.F90 obshand.F90 obshand_def.F90 obspoint.F90 obsstore.F90
gridrandom.F90 mt19937ar.f90 ran_num.F90 sol.F90 sol_def.F90 sol.F90 sol_-
def.F90 tam_tra_adv.F90 tam_tra_adv_tvd.F90 tam_tra_nxt.F90 tam_trj_def.F90
tam_trj_ref_def.F90 tam_ctl.F90 tam_def.F90 tam_ini.F90 tam_step.F90 tam_-
tip.F90 tam_tstool.F90 tam_undif.F90 eosbn2.F90 eosbn2_tam.F90 trf.F90 zdf_-
ctl_def.F90 zdf_def.F90 zdfmxl.F90 bge_standalone.F90 debug_output.F90 dotprodfld.F90
extra_types_def.F90 lib_fortran.F90 lib_print.F90 mt19937ar.f90 nemopart.F90
nemovar.F90 nemovar_bge.F90 nemovar_common.F90 nemovar_inner.F90 nemovar_-
inner_drivers.F90 oce_def.F90 oce_tam.F90 par_def.F90 par_kind.F90 paresp.F90
ran_num.F90 testing.F90 timing.F90 tst_var.F90 upd_inc.F90 updatePrepIFS.ksh
var_ctl.F90 varctl.F90 wrk_nemo.F90 ddatetoymdhms.h90 diaobs.F90 greg2jul.h90
jul2greg.h90 obs_read_seaice.F90 obs_read_sst.F90 tamtrj.F90 step.F90 ddatetoymdhms.h
obs_read_seaice.F90 obs_read_sst.F90 Ops_OceanSuperob.f90 lapack.F compiler_-
flags_Cray_Fortran.cmake nemo.cfg tools.cfg CMakeLists.txt ecbufrdata.F90 ddatetoymdh
greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90 fbmergedup.F90
fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (ODB): b2o_convert.F90 b2o_convert_aeolus.F90 b2o_convert_asr.F90
get_varindex.F90 sufger_aeolus.sql aeolus.h cma.h links_aeolus_hdr.sql sat.h
sufger_aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_-
it_members.h b2o_accessor_compressed.F90 b2o_common.F90 datetimemod_aeol.F90
varindex_module.F90 create_ioassign Merge_gmi_swaths.F90

Files modified (PREPDATA): matutils.F90

Files modified (SATRAD): mwave_const.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90
bufr_screen_reo3_superob.F90

Files modified (WAM): altas.F90 init_x0tauhf.F updatewd.F wamassi.F wamodel.F wgrib2fdb.F
wgribenout.F wgribout.F

Andrew Dawson - diad_CY45R2_pysuite_wam - BIT IDENTICAL

Port the wam experiment to ecFlow (IFS-453)

The wam experiment type should be ported to ecFlow.

Andrew Dawson - diad_CY45R2_pysuite_longrange - BIT IDENTICAL

Port the longrange experiment to ecFlow (IFS-454)

The longrange experiment type should be ported to ecFlow.

Andrew Dawson - N/A - BIT IDENTICAL

Make 0.5 degree wave model default for TCo319 eps_nemo (IFS-455)

The operational monthly forecast/hindcast use TCo319 with a 0.5 degree wave model for forecast days 14-46. Currently prepIFS will choose the 0.36 degree wave model when the user selects TCo319 atmospheric resolution in an eps_nemo experiment. It would be better to select the 0.5 degree wave model for this resolution since this matches the operational setup.

[No branch]

Andrew Dawson - diad_CY45R2_pysuite_eps_sv - BIT IDENTICAL

Port the eps_sv experiment to ecFlow (IFS-461)

The eps_sv suite should be ported to ecFlow.

Andrew Bennett - diab_CY45R2_pysuite_surface_for_CY46R1 - BIT IDENTICAL

Port the surface experiment to ecFlow (IFS-463)

The surface experiment type should be ported to ecFlow.

ifs-source has been modified to accommodate new/removed arguments to shared subroutines in the online surface model - specifically from CY45 (Meteo-France) and CAMS.

ifs-scripts, ifs-source, ifs-defaults branches are diab_CY45R2_pysuite_surface_for_CY46R1

Files modified (AEOLUS): `arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_l2bp_primary_ec.F90`

Files modified (ALGOR): `minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_caller.h m1qn3a.F90`

Files modified (ATLAS_APPS): `CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_args_module.F90 dwarf_command_module.F90 dwarf_data_module.F90 dwarf_util_module.F90`

Files modified (BL): `dynamic_symbols.c mf_blacklist.b`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake prepdata.cmake satrad.cmake ssa.cmake target_ignore_missing_symbols.cmake trans.cmake wam.cmake`

Files modified (DUMMY): aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_-
suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F
ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_-
horiz_flt.F suefpbip.F sueinfce.F

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90

Files modified (FIELDMAN): FieldSet.hpp

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90
cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_-
gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_-
dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90
cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90
cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 fv_gradient.F90
gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_-
spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90
gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90
gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_-
conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90
gnhqe_tndlagadiab_gw.F90 gnhqe_tndlagadiab_svd.F90 gnhqe_xxd.F90 gnhsvd2gw.F90
gnhx.F90 gp_derivatives.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_-
kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90
gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90 gpgw.F90
gphpre.F90 gpinislb.F90 gpmktend.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90 gprcph.F90
gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90 gpvcts.F90
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lanhqesi.F90 lanhsi.F90 lanhsib.F90 lapinea.F90 lapinea5.F90 lapineaad.F90
lapineatl.F90 lapineb.F90 lapinebad.F90 lapinebtl.F90 larche.F90 larche5.F90
larchead.F90 larchetl.F90 larcin2.F90 larcin2ad.F90 larcin2tl.F90 larcina.F90
larcinaad.F90 larcinatl.F90 larcinb.F90 larcinbad.F90 larcinha.F90 larcinhb.F90
larmes.F90 larmes5.F90 larmesad.F90 larmestl.F90 lassie.F90 lassietl.F90 latte_-
bbc.F90 latte_kappa.F90 latte_kappaad.F90 latte_kappatl.F90 lattes.F90 lattesad.F90
lattestl.F90 lattex.F90 lavabo.F90 lavabotl.F90 lavent.F90 laventad.F90 laventtl.F90
postphy.F90 si_cccor.F90 sidd.F90 sigam.F90 silkap.F90 silkapi.F90 sinhqe_-
seve.F90 sinhqe_vderi.F90 siptp.F90 siqq.F90 siseve.F90 siskap.F90 siskapi.F90
sitnu.F90 spchor.F90 spcsi.F90 spnh_conv_nhvar.F90 spnh_conv_prhs.F90 spnhqesi.F90
spnhqesi_prodskap.F90 spnhsi.F90 tropo_tep.F90 aro_adjust.h aro_ground_diag.h
aro_ground_diag_2isba.h aro_lima.h aro_rain_ice.h aroini_micro.h aroini_micro_-
lima.h aroini_nsv.h deello.intfb.h eapply_pll_recf.intfb.h ebicli.intfb.h ebipos.intf
ecoupl1.intfb.h ecoupl1ad.intfb.h ecoupl2.intfb.h ecoupl2ad.intfb.h ecvargpad.intfb.h
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espnhqesi_prodskap.intfb.h etenc.intfb.h etransdir_nhconvprhs.intfb.h etransinv_-

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can1.F90 canari.F90 capotx.F90 caprsurf.F90 carcli.F90 casmswi.F90 bascoe_-
chem_ini.F90 bascoe_hetconst.F90 bascoe_kpp_Rates.F90 bascoe_wetdep.F90 bascoe_-
zenith_fct.F90 bascoetm5_chem_ini.F90 bascoetm5_noymass.F90 chem_bascoe.F90
chem_bascoetm5.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90
chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_diurnal.F90 mocage_chem_-
ini.F90 mocage_krat_racmobus.F90 tm5_calrates.F90 tm5_chem_ini.F90 tm5_do_-
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cormassdry.F90 updcli.F90 updclie.F90 updclie_co2.F90 updcpl.F90 updnemoocean.F90
updnud.F90 updrgas.F90 ctxgetdb.F90 ctxinitdb.F90 ctxputdb.F90 distribtype_-
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forecast_error.F90 fpwrncf.F90 get_clinc.F90 gmassdiag.F90 gp_model.F90 gp_-
model_ad.F90 gp_model_heap.F90 gp_model_heap2.F90 gp_model_stack.F90 gp_model_-
tl.F90 iopack.F90 jmgfixer.F90 monfpos.F90 negfixer.F90 qmfixer.F90 qmfixer2.F90
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cpxfu.F90 extfpnorm.F90 fpgpnorm.F90 fpspnorm.F90 grib_code_message.F90 inifaoutinfo.
ppclose.F90 ppflush.F90 ppopen.F90 ppstat.F90 preset_grib_template.F90 satsim.F90
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wrgridall.F90 wrgridall_fp.F90 wrgridall_map.F90 wrgridua.F90 wrmlpp.F90 wrmlppa.F90
wrmlppa_io_serv.F90 wrmlppg.F90 wrmlpplg.F90 wroutgpgb.F90 wroutspgb.F90 wrphtrajt.F9
wrsp2fa.F90 wrspeca.F90 wrspeca_fp.F90 wrspeca_gp.F90 wrspeca_map.F90 wrxfu.F90
fp_serv_cpfpfilter.F90 fp_serv_suiosctmpl.F90 fp_serv_sync.F90 suinif_fp.F90
checkinclim.F90 cpclimi.F90 cpfpfilter.F90 cpvpospr.F90 cvlaniso.F90 decvlaniso.F90
dynfpos.F90 endpos.F90 endpos_prepgfl.F90 endvpos.F90 fpachmt.F90 fpcica.F90
fpcincape.F90 fpcliphy.F90 fpcordyn.F90 fpcorphy.F90 fpfilter.F90 fpgeo.F90

fpgeophy.F90 fphalo.F90 fpintdyn.F90 fpintphy.F90 fpmodcfu.F90 fpmodprec.F90
fpmodxfu.F90 fpnilphy.F90 fposhor.F90 fposhorlag.F90 fposhorlagphy.F90 fposhorphy.F90
fpsampl.F90 fpsaturcap.F90 fpselezo.F90 fpspecfitg.F90 fpspnorms.F90 fptsa_-
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iofpos.F90 openfpfa.F90 phymfpos.F90 predynfpos.F90 pregpfpos.F90 prespfpos.F90
rdclimo.F90 rdecclimo.F90 rdfpfilter.F90 scan2m_hpos.F90 scan2m_mpos.F90 scan2m_-
vpos.F90 spaconvert.F90 spos.F90 sposgf.F90 stepo_fpos.F90 su4fpos.F90 sualfpos.F90
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sufpf.F90 sufpfields.F90 sufpfilters.F90 sufpfit.F90 sufpg.F90 sufpg2.F90 sufpgeometr
sufpgrib.F90 sufpioh.F90 sufpios.F90 sufpmapf.F90 sufpmodelgeo.F90 sufpofname.F90
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sufpusergeo.F90 sufpv.F90 sufpvert.F90 sufpvset_dir.F90 sufpvset_inv.F90 sufpwfpbuf.F
sufpwfpds.F90 sufpwide.F90 sufpxfu.F90 sumpfpos.F90 sumpfpos_dep.F90 suprocfp.F90
suprocfp_dep.F90 suvfpos.F90 suvfposl.F90 suvpos.F90 updvpos.F90 vpos.F90 vpos_-
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wrplfp.F90 wrplfp_io_serv.F90 wrsfp.F90 gbrad_get.F90 gbrad_get_ad.F90 gbrad_-
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gbrad_put_tl.F90 gbrad_refrac.F90 gbrad_screen.F90 gbrad_setup.F90 gbrad_-
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ukca_check_md_nd.F90 ukca_chem_ifs.F90 ukca_cloudproc.F90 ukca_coag_coff_-
v.F90 ukca_coagwithnucl.F90 ukca_cond_coff_v.F90 ukca_conden.F90 ukca_dcoff_-
par_av_k.F90 ukca_ddepaer.F90 ukca_impc_scav.F90 ukca_ingridg.F90 ukca_mode_-
ems.F90 ukca_mode_ems_ifs.F90 ukca_no3nh4.F90 ukca_offl_ox.F90 ukca_prim_-
car.F90 ukca_prim_du.F90 ukca_prim_du2.F90 ukca_prim_soa.F90 ukca_prim_ss.F90
ukca_prim_su.F90 ukca_radaer_compute_aod.F90 ukca_radaer_ifs.F90 ukca_radaer_-
init.F90 ukca_radaer_lut_in.F90 ukca_radaer_read_luts.F90 ukca_radaer_read_-
precalc.F90 ukca_radaer_set_thermodynamic.F90 ukca_rainout.F90 ukca_remode.F90
ukca_sedim.F90 ukca_sedimnt.F90 ukca_so2so4.F90 ukca_solvecoagnucl_v.F90 ukca_-
vapour.F90 ukca_vgrav.F90 ukca_vgrav_av_k.F90 ukca_volume_mode.F90 ukca_water_-
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laitri.F90 laitri_weno.F90 laitri_weno_ad.F90 laitri_weno_init.F90 laitri_-
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add3to5.F90 add5to3.F90 addbgs.F90 addfgs.F90 dealfpos.F90 dealsc2.F90 dealsekf.F90
dealspa.F90 dverint.F90 filedate.F90 final_stats.F90 gpnorm_gfl.F90 grib_-
mean.f90 gribioflush.F90 gstats_label_ifs.F90 interp_gp.F90 link.f90 matrixin.F90
maxgpfv.F90 mod_ini.F90 modeltojb.F90 modeltojbad.F90 opdis.F90 openfa.F90

openfainfo.F90 prepacka.F90 prt_ctlvec_norms.F90 random_ctlvec.F90 rdfa2gp.F90
rdspec.F90 readmask.F90 reset_accfie_vareps.F90 save_evecs.F90 save_test4dinc.F90
savmoderr.F90 sbs5to3.F90 sbsbgs.F90 sbsfgs.F90 state2spec.F90 state2specad.F90
sualspa1.F90 suspvariables.F90 updtim.F90 verdisint.F90 verint.F90 wrgp2fa.F90
write_ctlvec_grib.F90 write_grid_grib.F90 write_wavelet_initcv_grib.F90 wrresf.F90
add_moderr_tl.F90 addhysin.F90 addhysinad.F90 adtest.F90 aerlid_setup.F90 balvert.F90
balvertad.F90 balverti.F90 balvertiad.F90 bgevecs.F90 bgpert.F90 bgvecs.F90
cain.F90 cainad.F90 cainin.F90 caininad.F90 chavar.F90 chavarad.F90 chavarin.F90
chavarinad.F90 chkobtim.F90 congrad.F90 cosjl.F90 cosjr.F90 cossmq.F90 cvar2.F90
cvar2ad.F90 cvar2in.F90 cvar2inad.F90 cvar3.F90 cvar3ad.F90 cvar3in.F90 cvar3inad.F90
cvargpad.F90 cvargptl.F90 djbdy.F90 estsig.F90 estsiga.F90 evcost.F90 fltbgerr.F90
get_traj_phys.F90 getmini.F90 getmini2.F90 getsatid.F90 grbspa.F90 grbspa_-
mf.F90 grtest.F90 inflation_pert.F90 jb_wav_var.F90 jbtoacv.F90 jbtomodel.F90
jbtomodelad.F90 jbvcor_wavelet.F90 jbvcor_waveletad.F90 jbvcor_waveletin.F90
jbvcor_waveletinad.F90 jbvcorg.F90 jgcor.F90 jgcorad.F90 jgcori.F90 jgcoriad.F90
jgnr.F90 jgnrad.F90 jgnri.F90 jgnriad.F90 jgvcor.F90 lchtcalc.F90 litest.F90
monitoring_summary.F90 preppcm.F90 rd801.F90 rdfpinc.F90 read_surfgrid_traj.F90
readvec.F90 savmini.F90 savmini2.F90 setjbhybacv.F90 setqccma.F90 setran.F90
sqrtb.F90 sqrtbad.F90 sqrtbin.F90 sqrtbinad.F90 suacv.F90 sualctv.F90 sualges.F90
suallr.F90 suallt.F90 suanebuf.F90 suecges.F90 suensmem.F90 suinep.F90 suineplap.F90
suinfce.F90 suinrenormfce.F90 suiomi.F90 sujb.F90 sujbbal.F90 sujbcor.F90 sujbcosu.F90
sujbdat.F90 sujbhybacv.F90 sujbstd.F90 sujbtest.F90 sujbvarens.F90 sujbwavelet.F90
sujbwavelet0.F90 sujbwavelet_stdevs.F90 sujbwavgen.F90 sujbwavgen_hybraw.F90
sujbwavrenorm.F90 sujbwavstats.F90 sujbwavvc.F90 sujbwavwri.F90 sumdfce.F90
sumoderr.F90 suprecov.F90 suprfep.F90 suqnorm.F90 surad.F90 surinc.F90 suscal.F90
suscal_jb.F90 suscal_norms.F90 suscat.F90 susepfce.F90 suseprenormfce.F90 sushfce.F90
suvar.F90 suvazx.F90 suvifce.F90 taskob.F90 taskob_thread.F90 taskobad.F90
taskobad_thread.F90 taskobtl.F90 taskobtl_thread.F90 tlprop.F90 tltest.F90
upspec.F90 varcalc.F90 varflt_crt.F90 varflt_trunc.F90 vec2gp.F90 wavxform.F90
wrchres.F90 writelct.F90 writeoba.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): i_system.c facgrm.F90 fadgra.F90 fagote.F90 faieno.h falgra.h
faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.h isrchfltpv.body.h
lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_mod.F90 mpl_allgatherv_-
mod.F90 mpl_comm_split_mod.F90 mpl_end_mod.F90 mpl_gatherv_mod.F90 rttov_-
const.F90 rttov_ec_mod.F90 yomlun_ifsaux.F90 faconvgrib.F90 abor1.F90 dr_-
hook_util.F90 drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 hdf_dbase_mod.F90
odb2_dbase_mod.F90 odbserver_dbase_mod.F90 CMakeLists.txt test_dbase_performance.F90
test_dbase_view.F90 test_overhead_odb2.F90 test_parallel_distribute.F90

Files modified (NEMO): diahth.F90 zdfmxl.F90 arch-IBM_EKMAN_INGV.fcm namelist_-
cfg CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref
namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_-
ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90
diaar5.F90 diacfl.F90 diadct.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90
cla.F90 lbclnk.F90 lib_mpp.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90

sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_-
clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90
sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90 traldf.F90 tranxt.F90 trazdf.F90
trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90
zdftmx.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90
par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_-
cfc.F90 trcini_cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_trc.F90 trcnam_-
my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90
p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90
trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort
athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90
compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90
create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam arch_configuration.cmake
arch_keys_Intel.cmake compiler_flags.cmake compiler_flags_Intel_CXX.cmake compiler_-
flags_Intel_Fortran.cmake compiler_flags_PGI_Fortran.cmake tools_configuration.cmake
tools_keys_Intel.cmake fcmcmake.ksh fcmcsmake.ksh fcmnmake.ksh fcmsmake.ksh
fcmxiosmake.ksh CMakeLists.txt nemogcmcoup_exflds_get.F90 nemogcmcoup_lim2_-
update.F90 nemogcmcoup_mlflds_get.F90 nemogcmcoup_mlinit.F90 nemohth.F90 griblsm.F90
nemogribcoup.f90 nemogribcoupmpmd.f90 in_out_manager.F90 modhookdummy.F90 nctools.F90
nemogcmcoup_coupinit.F90 nemogcmcoup_coupinit_mpmd.F90 nemogcmcoup_end_ioserver.F90
nemogcmcoup_exflds_get.F90 nemogcmcoup_final.F90 nemogcmcoup_get.F90 nemogcmcoup_-
get_1way.F90 nemogcmcoup_get_mpmd.F90 nemogcmcoup_init.F90 nemogcmcoup_init_-
ioserver.F90 nemogcmcoup_init_ioserver_2.F90 nemogcmcoup_lim2_get.F90 nemogcmcoup_-
lim2_update.F90 nemogcmcoup_step.F90 nemogcmcoup_update.F90 nemogcmcoup_update_-
add.F90 nemogcmcoup_update_mpmd.F90 nemogcmcoup_wam_coupinit.F90 nemogcmcoup_-
wam_get.F90 nemogcmcoup_wam_update.F90 nemogcmcoup_wam_update_stress.F90 timing.F90
date_utils.F90 gribfluxes.F90 griblsm.F90 gribtools.F90 oceaninput.F90 toolspar_-
kind.F90 nemopseudo.F90 nemopseudompmd.F90 nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg ioserver.cfg
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nemo.cfg ioserver.cfg nemo.cfg coupsim.cfg coupsim.cfg tools.cfg dists_atm_-
to_simocn_gauss_1pts_cca.ksh dists_atm_to_simocn_gauss_4pts_cca.ksh dists_-
atm_to_simocn_gauss_oasis3_cca.ksh dists_simocn_gauss_to_atm_1pts_cca.ksh dists_-
simocn_gauss_to_atm_4pts_cca.ksh dists_simocn_gauss_to_atm_oasis3_cca.ksh remap_-
atm_to_simocn_gauss_1pt_cca.ksh remap_atm_to_simocn_gauss_4pt_cca.ksh remap_-
atm_to_simocn_gauss_oasis3_cca.ksh remap_simocn_gauss_to_atm_1pt_cca.ksh remap_-
simocn_gauss_to_atm_4pt_cca.ksh remap_simocn_gauss_to_atm_oasis3_cca.ksh simocngausst
cray_inner.ksh cray_mppcomb.ksh cray_outer.ksh getecfstestdata.ksh namelist.nemo.ORCA
Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_ORCA1_Z46 setup_namelist_outer_ORCA1_Z75 setup_namelist_outer_io setup_-
outer_data swan_inner.ksh swan_outer.ksh cray_outer.ksh getecfstestdata.ksh
field_def.xml field_def_xios2.xml iodef_default.xml iodef_default_xios2.xml
iodef_single_xios2.xml namelist_cfg.ORCA025_Z75 namelist_cfg.ORCA1_Z42 namelist_-
ice_cfg.ORCA025 namelist_ice_cfg.ORCA1 namelist_ref ompi_outer.ksh setup_-

namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_io setup_namelist_xios setup_outer_data cdfmoc.f90 config.macports Makefile
config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90 config.cray
ecatmosbufrdata.F90 ecsstbufrdata.F90 Makefile config gribdcoast.F90 griblsm.F90
griblsmwam.F90 gribtools.F90 config.macports Makefile config griblsm.F90 gribthin.F90
gribtools.F90 index_sort.F90 nctools.F90 obs_fbm.F90 obs_utils.F90 toolspar_-
kind.F90 icecdamp.F90 config.cray config.crayomp config.macports config.macportsomp
config.opensuse131 config.opensuse131mpiomp config.opensuse131omp getsst.F90
griblsm.F90 orca_grid.F90 remapfluxes.F90 remapsst.F90 remapsstgauss.F90 scripsst.F90
grid2kml kmlgrid.F90 kmlgridmod.F90 Makefile areadata.F90 config ctl_stop.h90
date_utils.F90 amona_go66go65_sfc.ksh amona_go66go65_sfc_masked.ksh amona_-
go66go65_ua.ksh amona_go66go65_waves.ksh omona_go66_1h.ksh omona_go66_3h.ksh
plot_10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh
plot_sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
oras5_sst_2017.ksh omona_ostia_sst_2017.ksh plot_sst_2017.ksh retrieve_oras4_-
sst_2017.ksh retrieve_oras5_sst_2017.ksh retrieve_ostia_sst_2017.ksh standard_-
areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
netcdfinput.F90 omonadata.F90 omonatypes.F90 orca_grid.F90 spherepolygons.F90
toolspar_kind.F90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
plotnemo plotobs plotobs.F90 plotpoints plotpoints.F90 plotpointsnc plotreg.F90
plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 config.macports config.macportsomp fbaddrename.
fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
coords.F90 config.macports

Files modified (OBSTAT): obstat_def.F90 iniitemloc.F90 inisoftdef.F90 obstat_scat_-
plot.F90 plotsoft.F90 updsoft.F90 writegridstats.F90 writescat.F90 writesoft.F90

Files modified (ODB): CMakeLists.txt cma_open.c b2o_amend.F90 b2o_convert.F90 b2o_-
convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_-
atovs.F90 b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_gmi.F90 b2o_-
convert_grad.F90 b2o_convert_iasi.F90 b2o_convert_modisaer.F90 b2o_convert_-
msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_oscat.F90 b2o_convert_pilot.F90
b2o_convert_rain_rates.F90 b2o_convert_reo3.F90 b2o_convert_ssmis_1d.F90 b2o_-
convert_synop_land.F90 b2o_convert_tamdar.F90 b2o_convert_temp.F90 b2o_convert_-
temp_hires.F90 b2o_convert_windprofiler.F90 b2o_crc.c calc_azim.F90 get_varindex.F90
odb_target_ignore_missing_symbols.cmake sat_atovs_hyper.sql scat_ambig_select.sql

sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_4.sql decis_-
robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h sat_atovs.sql
sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h b2o_debug.h
cmaio.h odb_assoc_cols.h odb_it_members.h calc_azim.h codb.c datastream.F90
twindow.c b2o_functional.F90 b2o_get.F90 b2o_utility.F90 varindex_module.F90
bator_datetime_mod.F90 bator_decodbufr_mod.F90 bator_decodgrib_mod.F90 bator_-
decodhdf5_mod.F90 bator_decodnetcdf_mod.F90 bator_ecritures_mod.F90 bator_-
impr_mod.F90 bator_init_mod.F90 bator_lectures_mod.F90 bator_module.F90 bator_-
rad_postproc_mod.F90 bator_saisies_mod.F90 bator_util_mod.F90 bator_namelist.nam.h
ecma2ecmascr Bator.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h
AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria
AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90
FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h
GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc
IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.
IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF
LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h
LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 Logbook.interface.F90
LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h
ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h
ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte
ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90
ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen
ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.c
ObsBiasIncrementVARBC.h ObsBiasIncrementVARBC.interface.F90 ObsBiasLListsTOVSCV.F90
ObsBiasLListsVARBC.F90 ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90
ObsBiasVARBC.cc ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsSpaceODB.cc ObsSpaceODB.
ObsSpaceODB.interface.F90 ObsVector.cc ObsVector.h ObsVector.interface.F90
StateIFS.cc StateIFS.h Trajectory.list.F90 VariablesIFS.interface.F90 ifs_-
init_wrapper.F90 instantiateObsAuxFactories.h instantiateObsErrorFactory.h
instantiateObsOpFactories.h instantiateTlmFactory.h mpi_wrapper.F90 pm_link_-
mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): matutils.F90 chgrib.c fillgaussgrib.F90 unbal_eda.F90
wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90
radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-
gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-
ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-

optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-
mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-
optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-
save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-
spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90
radiation_tripleclouds_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): throw.h find_lsm.h get_lsm.h getcparam.h gaussgrid.F90 mod_-
camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_mie.F90 mod_mwatlas_-
m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_atlas.F90 mod_rttov_-
fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_test.F90 mod_screen_-
1c_bufrmsg.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90 rttov_-
chain.F90 rttov_coef_io_mod.F90 rttov_ec_settings.F90 rttov_fast_coef_utils_-
mod.F90 rttov_getoptions.F90 rttov_global.F90 rttov_hdf_chanprof_io.F90 rttov_-
hdf_coefs.F90 rttov_hdf_emissivity_io.F90 rttov_hdf_options_config_io.F90 rttov_-
hdf_options_rt_all_io.F90 rttov_hdf_options_rt_ir_io.F90 rttov_hdf_options_-
rt_mw_io.F90 rttov_hdf_profile_io.F90 rttov_hdf_profiles.F90 rttov_hdf_radiance_-
io.F90 rttov_hdf_reflectance_io.F90 rttov_hdf_rttov_coef_io.F90 rttov_hdf_-
rttov_coef_pcc_io.F90 rttov_htfrtc_interface_mod.F90 rttov_interface_mod.F90
rttov_lapack_mod.F90 rttov_math_mod.F90 rttov_scattering_mod.F90 rttov_solar_-
refl_mod.F90 rttov_tessem_mod.F90 rttov_test_k_mod.F90 rttov_test_mod.F90 rttov_-
types.F90 rttov_unix_env.F90 rttov_zutility.F90 mwave_ec_setopts.F90 mwave_-
emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_-
ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_screen.F90
bufr_screen_amsr2_1d.F90 bufr_screen_gmi_1d.F90 bufr_screen_reo3_superob.F90
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mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_-
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pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_-
scale_cld_profile_inc.F90 rttov_scale_opt_param_inc.F90 rttov_scale_pccomp_-
inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_-
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fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_-
windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_-
bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_-
fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h
surfws.h osm.cfg srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90
srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_-
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sugp1s.F90 suinif1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90
wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 namct01s.h mpl_-
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Files modified (TRANS): dealloc_resol_mod.F90

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airsea.F airsea.F90 aki.F aki.F90 aki_ice.F aki_ice.F90 altas.F90 avoidpeaks.F
avoidpeaks.F90 betadef.F betadef.F90 bouinpt.F bouinpt.F90 bouint.F bouint.F90
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check.F check.F90 checkcfl.F checkcfl.F90 chesig.F chesig.F90 chief.F chief.F90
cigetdeac.F cigetdeac.F90 cimsstrn.F cimsstrn.F90 cireduce.F cireduce.F90 ciwabr.F
ciwabr.F90 ciwaf.F ciwaf.F90 class_wgrib.F clean_outbs.F closend.F closend.F90
combinepeaks.F combinepeaks.F90 command.F confile.F confile.F90 cpfdb.F create_-
wam_bathymetry.F create_wam_bathymetry.F90 create_wam_bathymetry_ETOPO1.F create_-
wam_bathymetry_ETOPO1.F90 crossas.F crossas.F90 crossw.F crossw.F90 ctuw.F
ctuw.F90 current2wam.F current2wam.F90 decode_integrated_parameter.F decode_-
integrated_parameter.F90 decode_point_spectra.F decode_point_spectra.F90 dev.F
dev.F90 difdate.F difdate.F90 docombine.F docombine.F90 dotdc.F dotdc.F90 dummy_-
alt.F dummy_alt.F90 dummy_cray.F dummy_eclib.F dummy_eclib.F90 dummy_fdb.F
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implsch.F90 incdate.F incdate.F90 inisnonlin.F inisnonlin.F90 init_fieldg.F
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kerkei.F kerkei.F90 kgribsize.F kgribsize.F90 kurtosis.F kurtosis.F90 kzeone.F
kzeone.F90 lasttwobins.F lasttwobins.F90 llalloc_grdfld.F loc2glo.F lowenergy.F
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mcout.F90 means.F means.F90 meansqs.F meansqs.F90 mergesarcor.F mergesarcor.F90
mfredir.F mfredir.F90 mgrid.F mgrid.F90 micep.F micep.F90 mintf.F mintf.F90
mnintw.F mnintw.F90 mpabort.F mpabort.F90 mpbcastgrdfld.F mpbcastgrid.F mpbcastgrid.F
mpbcastintfld.F mpbcastintfld.F90 mpbcastsarin.F mpbcastsarin.F90 mpbcastscfld.F
mpclose_unit.F mpclose_unit.F90 mpcrtbl.F mpcrtbl.F90 mpdecomp.F mpdecomp.F90
mpdistribfl.F mpdistribfl.F90 mpdistribscfld.F mpdistribscfld.F90 mpexchng.F
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out_onegrdpt.F out_onegrdpt.F90 out_onegrdpt_sp.F out_onegrdpt_sp.F90 outbc.F
outbc.F90 outbeta.F outbeta.F90 outblock.F90 outbs.F outbs.F90 outcom.F outcom.F90
outers.F outers.F90 outgrid.F outgrid.F90 outint.F outint.F90 outint_io_serv.F90
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outunwamfield.F outunwamfield.F90 outunwamtest.F outunwamtest.F90 outwint.F90
outwnorm.F outwnorm.F90 outwpsp.F90 outwspec.F outwspec.F90 outwspec_io_serv.F90
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freq.F90 peakfri.F peakfri.F90 preproc.F preproc.F90 preset.F preset.F90 preset_-
wgrib_template.F preset_wgrib_template.F90 prewind.F prewind.F90 propag_wam.F
propag_wam.F90 propags.F propags.F90 propags1.F propags1.F90 propags2.F propags2.F90
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secondhh.F90 secondhh_gen.F secondhh_gen.F90 secspom.F secspom.F90 semean.F
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vplus_d.F90 w_cdf.F90 w_cdfmax.F90 w_pdf.F90 w_pmax.F90 wam2odb.F90 wam_nproma.F90
wam_sorti.F90 wam_sortini.F90 wam_syminv.F wam_syminv.F90 wam_u2l1cr.F wam_-
u2l1cr.F90 wam_user_clock.F wam_user_clock.F90 wamadszidl.F wamadszidl.F90
wamassi.F wamassi.F90 wamcur.F wamcur.F90 wamendnemoio.F90 wamininemoio.F wamininemoi
wamnorm.F wamodel.F wamodel.F90 wamoi.F wamoi.F90 wamwnd.F wamwnd.F90 wavemdl.F
wavemdl.F90 wdfluxes.F wdfluxes.F90 wdirspread.F wdirspread.F90 weflux.F weflux.F90
wgrib2fdb.F wgrib2fdb.F90 wgribencode.F wgribencode.F90 wgribencode_model.F90
wgribenout.F wgribenout.F90 wgribout.F wgribout.F90 windsea.F windsea.F90 wnfluxes.F

wnfluxes.F90 wposnam.F wposnam.F90 write_currents.F write_mpdecomp.F write_-
mpdecomp.F90 writefl.F writefl.F90 writestress.F writestress.F90 writsta.F
writsta.F90 wrong_wnfluxes.F wrong_wnfluxes.F90 wsigstar.F wsigstar.F90 wsmfen.F
wsmfen.F90 wstream_strg.F wstream_strg.F90 wvalloc.F wvalloc.F90 wvdealloc.F
wvdealloc.F90 wvfricvelo.F90 wvwamdecomp.F wvwamdecomp.F90 wvwaminit.F wvwaminit.F90
wvwaminit1.F wvwaminit1.F90 z0wave.F z0wave.F90 create_wam_library_cray create_-
wam_library_gnu extract_WAM_code readme run_bouint_workstation run_preproc.fine_-
workstation run_preproc_workstation run_preset.fine_workstation run_preset_-
workstation run_wamodel.fine_workstation run_wamodel_workstation abort1.intfb.h
adjust.intfb.h airsea.intfb.h aki.intfb.h aki_ice.intfb.h avoidpeaks.intfb.h
betadef.intfb.h bouinpt.intfb.h buildstress.intfb.h cigetdeac.intfb.h cimsstrn.intfb.
cireduce.intfb.h ciwabr.intfb.h ciwaf.intfb.h class_wgrib.intfb.h closend.intfb.h
combinepeaks.intfb.h command.intfb.h confile.intfb.h crossas.intfb.h crossw.intfb.h
ctuw.intfb.h current2wam.intfb.h dev.intfb.h difdate.intfb.h docombine.intfb.h
dotdc.intfb.h ersfile.intfb.h expand_string.intfb.h fdur.intfb.h femean.intfb.h
femeanws.intfb.h file_transfer.intfb.h fillgaps.intfb.h findb.intfb.h fkmean.intfb.h
fld2wam.intfb.h fldinter.intfb.h fndprt.intfb.h frcutindex.intfb.h fustar.intfb.h
fwsea.intfb.h gapinterpol.intfb.h get_preset_wgrib_template.intfb.h getcurr.intfb.h
getspec.intfb.h getstress.intfb.h getwnd.intfb.h grdata.intfb.h grfield.intfb.h
grib2wgrid.intfb.h grstname.intfb.h gsfile_new.intfb.h h_max.intfb.h halfspread.intfb
headbc.intfb.h ifstowam.intfb.h imphftail.intfb.h implsch.intfb.h incdate.intfb.h
inisnonlin.intfb.h init_fieldg.intfb.h init_x0tauhf.intfb.h initialint.intfb.h
initmdl.intfb.h initnemocpl.intfb.h iniwcst.intfb.h intpol.intfb.h intspec.intfb.h
inwgrib.intfb.h jafu.intfb.h jonswap.intfb.h kerkei.intfb.h kgribsize.intfb.h
kurtosis.intfb.h kzeone.intfb.h lasttwobins.intfb.h llalloc_grdfld.intfb.h
loc2glo.intfb.h lowenergy.intfb.h makeframes.intfb.h makegrid.intfb.h mblock.intfb.h
mbounc.intfb.h mbounf.intfb.h mboxb.intfb.h mcout.intfb.h means.intfb.h meansqs.intfb
mergesarcor.intfb.h mfredir.intfb.h mgrid.intfb.h micep.intfb.h mintf.intfb.h
mnintw.intfb.h mpabort.intfb.h mpbcastgrid.intfb.h mpbcastintfld.intfb.h mpbcastsarin
mpclose_unit.intfb.h mpcrtbl.intfb.h mpdecomp.intfb.h mpdistribfl.intfb.h mpdistribsc
mpexchng.intfb.h mpexchngsarin.intfb.h mpfldtoifs.intfb.h mpgatherbc.intfb.h
mpgatherersfile.intfb.h mpgatherfl.intfb.h mpgathergrdfld.intfb.h mpgatherscfld.intfb
mpminmaxavg.intfb.h mppewithindist.intfb.h mpuserin.intfb.h mstart.intfb.h
mtabs.intfb.h mubuf.intfb.h mwp1.intfb.h mwp2.intfb.h newwind.intfb.h nlweigt.intfb.h
notim.intfb.h oifield.intfb.h onestepapart.intfb.h optint.intfb.h out_onegrdpt.intfb.
out_onegrdpt_sp.intfb.h outbc.intfb.h outbeta.intfb.h outblock.intfb.h outbs.intfb.h
outcom.intfb.h outers.intfb.h outgrid.intfb.h outint.intfb.h outint_io_serv.intfb.h
outnam.intfb.h outpp.intfb.h outsetwmask.intfb.h outspec.intfb.h outunwamfield.intfb.
outunwamtest.intfb.h outwint.intfb.h outwnorm.intfb.h outwpsp.intfb.h outwspec.intfb.
outwspec_io_serv.intfb.h outxt.intfb.h packi.intfb.h packr.intfb.h parmean.intfb.h
partitioning.intfb.h peak.intfb.h peak_ang.intfb.h peak_freq.intfb.h peakfri.intfb.h
preset_wgrib_template.intfb.h prewind.intfb.h propags.intfb.h propags1.intfb.h
propags2.intfb.h propdot.intfb.h prspp.intfb.h prspps.intfb.h readbou.intfb.h
readcur.intfb.h readfl.intfb.h readpre.intfb.h readsarspec.intfb.h readsat.intfb.h
readsta.intfb.h readstress.intfb.h readwgrib.intfb.h readwind.intfb.h rearrngsar.intf
recvnemofields.intfb.h resize_gap_array.intfb.h resize_getwspec.intfb.h resize_-
sarinput.intfb.h rotspec.intfb.h runwam.intfb.h saras.intfb.h savrest.intfb.h
savspec.intfb.h savstress.intfb.h sbottom.intfb.h scosfl.intfb.h sdepthlim.intfb.h

sdissip_jan.intfb.h sdiwbk.intfb.h se10mean.intfb.h sebtmean.intfb.h second_-
order_lib.intfb.h secondhh.intfb.h secondhh_gen.intfb.h secspom.intfb.h semean.intfb.
sep3tr.intfb.h sepwisw.intfb.h set_wflags.intfb.h setice.intfb.h setmarstype.intfb.h
sinput.intfb.h sinput_ard.intfb.h sinput_jan.intfb.h skewness.intfb.h smoothsarspec.i
snonlin.intfb.h spectra.intfb.h spr.intfb.h stat_nl.intfb.h sthq.intfb.h stokesdrift.
stresso.intfb.h strspec.intfb.h sumenergy.intfb.h swellsep.intfb.h tables_-
2nd.intfb.h tabu_swellft.intfb.h tau_phi_hf.intfb.h tauhf.intfb.h taut_z0.intfb.h
threshhold.intfb.h timin.intfb.h topoar.intfb.h transf.intfb.h transmeans.intfb.h
transpart.intfb.h tustreas.intfb.h uibou.intfb.h uiprep.intfb.h unblkrord.intfb.h
unsetice.intfb.h update.intfb.h updatewd.intfb.h updnemofields.intfb.h upwspec.intfb.
userin.intfb.h vmin.intfb.h vmin_d.intfb.h vplus.intfb.h vplus_d.intfb.h wam2odb.intf
wam_nproma.intfb.h wam_sorti.intfb.h wam_sortini.intfb.h wam_syminv.intfb.h
wam_u2l1cr.intfb.h wam_user_clock.intfb.h wamadszidl.intfb.h wamassi.intfb.h
wamcur.intfb.h wamendnemoio.intfb.h wamininemoio.intfb.h wamnorm.intfb.h wamodel.intf
wamoi.intfb.h wamwnd.intfb.h wavemdl.intfb.h wdfluxes.intfb.h wdirspread.intfb.h
weflux.intfb.h wgrib2fdb.intfb.h wgribencode.intfb.h wgribencode_model.intfb.h
wgribenout.intfb.h wgribout.intfb.h windsea.intfb.h wnfluxes.intfb.h wposnam.intfb.h
writefl.intfb.h writestress.intfb.h writsta.intfb.h wrong_wnfluxes.intfb.h
wsigstar.intfb.h wsmfen.intfb.h wstream_strg.intfb.h wv_io_serv_rec.intfb.h
wvalloc.intfb.h wvdealloc.intfb.h wvwamdecomp.intfb.h wvwaminit.intfb.h wvwaminit1.in
z0wave.intfb.h coupling_var.F90 output_struct.F90 pgmcl_lib_wam.F90 unstruct_-
bound.F90 unstruct_curr.F90 unstruct_wind.F90 unwam.F90 wav_netcdf.F90 wav_-
netcdf_fct.F90 wav_netcdf_var.F90 yow_rank_gloloc.F90 yowaltas.F yowaltas.F90
yowcard.F yowcard.F90 yowchecksmodule.F90 yowcinp.F yowcinp.F90 yowcoer.F yowcoer.F90
yowconst_2nd.F yowconst_2nd.F90 yowcoup.F yowcoup.F90 yowcout.F yowcout.F90
yowcpbo.F yowcpbo.F90 yowcurg.F yowcurg.F90 yowcurr.F yowcurr.F90 yowdatapool.F90
yowdes.F yowdes.F90 yowelementpool.F90 yowerror.F90 yowexchangeModule.F90 yowfpbo.F
yowfpbo.F90 yowfred.F yowfred.F90 yowgap.F yowgap.F90 yowgrib_handles.F yowgrib_-
handles.F90 yowgribhd.F yowgribhd.F90 yowgrid.F yowgrid.F90 yowice.F yowice.F90
yowindn.F yowindn.F90 yowintp.F yowintp.F90 yowints.F yowintt.F yowjons.F yowjons.F90
yowmap.F yowmap.F90 yowmean.F yowmean.F90 yowmespas.F yowmespas.F90 yowmltsk.F
yowmpiModule.F90 yowmpp.F yowmpp.F90 yownemoflds.F yownemoflds.F90 yownemop.F
yownemop.F90 yownodepool.F90 yowover.F yowparam.F yowparam.F90 yowpcons.F yowpcons.F9
yowpdlibmain.F90 yowphys.F90 yowprproc.F yowprproc.F90 yowrankModule.F90 yowrefd.F
yowrefd.F90 yowsaras.F yowsaras.F90 yowsarinv.F yowshal.F yowshal.F90 yowsidepool.F90
yowspec.F yowspec.F90 yowstat.F yowstat.F90 yowswel.F yowtabl.F yowtabl.F90
yowtemp.F yowtemp.F90 yowtest.F yowtest.F90 yowtext.F yowtext.F90 yowtrains.F
yowtrains.F90 yowubuf.F yowubuf.F90 yowunit.F yowunit.F90 yowunpool.F yowunpool.F90
yowwami.F yowwami.F90 yowwind.F yowwind.F90 yowwndg.F yowwndg.F90

Andrew Bennett - diab_CY45R2_IFS-494_IFS-496_ecflow490_and_write_defs - BIT IDENTICAL

Always write defs to file (IFS-494)

At the moment pysuite1 writes the suite definition to stdout, which ends up in the exp_setup log file. Change it so that it always writes it to a separate file, to aid debugging.

Andrew Bennett - diab_CY45R2_IFS-494_IFS-496_ecflow490_and_write_defs - BIT IDENTICAL

Enforce a particular version of ecflow in the acceptance tests (IFS-496)

This work aims to resolve a couple of recent issues with the acceptance test framework:

- ecflow version 4.9.0 introduced changes to the way it writes out text-file suite definitions. It now outputs an # enddef at the end of a file.
- There is also a version number at the top which shows up as a difference if one is using a version of ecflow different to that which generated the known-good outputs. This is currently ignored by the acceptance test comparison script, but this is a fudge.

Enforcing a particular version of ecflow will overcome these issues, and allow a more seamless transition should the ecflow python API change (expected in ecflow 5).

Philip Browne - [No branch] - BIT IDENTICAL

Revert change from 16 to 24 bits per value for sea ice output (IFS-506)

Number of bits per value for sea ice field has changed from 16 in 43r3 to 24 in 45r1; seems to be unintentional. FD would like this fixed in 45r1 (post-implementation is fine).

[No branch]

Patrick Gillies - dipg_CY45R1_zero_counts_in_mpl_gathervs - BIT IDENTICAL

MPL_ALLGATHERV can't handle zero length send data (IFS-508)

MPL_ALLGATHERV uses the size of PSENDBUF to determine the length of the message from each rank. If only some ranks are sending data then those sending zero cause problems. Passing a zero length array causes problems in MPI. Also, MPL_ALLGATHERV_INT_SCALAR assumes all ranks send a length 1 message.

Solution is to add the optional argument KSENDCOUNT. If that is present then use it, otherwise use the prior behaviour of checking the size of the send buffer.

Fix also applied to MPL_GATHERV

Files modified (IFSAUX): `mpl_allgatherv_mod.F90 mpl_gatherv_mod.F90`

Wayne Gaudin - diwg_CY45R1_pgi18.4_v3 - BIT IDENTICAL

Fortran Standard NaN trapping (IFS-510)

Changed NaN trapping code from the Gnu extensions to standard Fortran.

This file only from this branch:-

ifs/module/traj_semilag_mod_oops.F90

Files modified (CMAKE): `autopromote.cmake`

Files modified (IFS): `traj_semilag_mod_oops.F90`

Files modified (IFSOBS): `hdf_dbase_mod.F90`

Files modified (NEMO): `arch_keys_PGI.cmake compiler_flags.cmake compiler_flags_-PGI_Fortran.cmake`

Files modified (ODB): `b2o_convert_pilot.F90 b2o_convert_synop_land.F90 b2o_convert_-windprofiler.F90 b2o_debug.h`

Files modified (WAM): `uras3a.F`

Tomas Kral, Axel Bonet, Maike Ahlgrimm - datk_CY45R2_ddh - BIT IDENTICAL

Integrate operational DDH scripts and sources into IFS (IFS-516)

Adds sources (and related scripts) of two DDH programs: ddhrun, and splitps . These programs were formerly built by FD, but are now integrated into the IFS build system.

Files modified (CMAKE): `ifsaux.cmake`

Files modified (IFS): `fpgpnorm.F90`

Files modified (IFSAUX): `comcha.h comdat.h comddh.h ctlarch.F ctldompf.F ctldomts.F ctlzon.F decops2.F description_table.dat getarea.F getcom1.F getcom2.F getdom.F getrec.F getreci.F getzon.F incdat.F invjul.F julday.F namus.h offset.F opone.F param.h rearec.F suarch.F sucom.F sucom2.F swapts.F ddhrun.F splitps.F`

Andrew Dawson - diad_CY45R2_cancel_dependency_check - BIT IDENTICAL

The wipefdb task can fail if it is run before fdb-wipe is built (IFS-519)

The *wipefdb* task that runs as part of the generic *cancel* family requires the fdb−wipe executable to be available when running with FDB5. Since CY45R2 the fdb−wipe executable is built as part of the experiment, therefore if you try and cancel an experiment before the *build_ifs_system* task has finished the *wipefdb* task will fail (e.g. if you made a mistake and want to resubmit the experiment). This is made awkward to diagnose since the *cancel* family writes logs to a different location than the rest of the suite and you can't access it directly from the ecFlow GUI to quickly see what went wrong.

There are other use case where this would be a problem, for example the climplot experiment type might not even run *build_ifs_system* at all, so there will never be an fdb−wipe command to call.

Under these circumstances it is perfectly safe to simply set the wipefdb task to complete and carry on with the rest of the cancel family. However, it might be worth adding a check to wipefdb.sms to see if the fdb−wipe command is available and allow the task to complete if it is not. This would normally be safe because lack of an fdb−wipe command implies the libraries for FDB5 were not built and therefore nothing could have been written to the FDB anyway. However, it may be possible that there are edge cases where some other problem causes us not to find fdb−wipe but there are files in the FDB, in this case allowing the task to complete could leave data hanging around in the FDB by mistake. Should we assume this risk is low and implement a check to allow wipefdb.sms to complete when the fdb−wipe command is not found, or do something more cautious?

Opinions welcome [˜dab], [˜dag]

Andrew Dawson - diad_CY45R2_longrange_fixes - BIT IDENTICAL

Fixes for longrange experiment type (IFS-520)

The longrange experiment type became broken in CY45R2 due to problems associated with the introduction of ecbuild. A necessary task was removed, and typos were introduced into the suite definition, and the prepIFS check file contains references to old configuration variables.

In order to get it working again the required work is:

- Re-introduce the sc_tools.sms task to the longrange suite definition
- Update the sc_tools task to work properly with ecbuild output
- Correct erroneous triggers in the longrange.def suite definition
- Update prepIFS checks to remove references to non-exist variables

prepIFS overlay: ˜diad/overlays/diad_CY45R2_longrange_fixes

Andrew Dawson - diad_CY45R2_pysuite_pyflow_upgrade - BIT IDENTICAL

Upgrade pyflow support library (IFS-525)

The pyflow support library bundled with ifs-scripts should be updated to the latest release (v1.2.0).

Andrew Dawson - diad_CY45R2_pysuite_ecbuild_catchup - BIT IDENTICAL

Add missing clean_source_dirs task for pysuite (IFS-526)

An extra task clean_source_dirs was added to the SMS and analysis Python definitions, but is missing from the newer pysuite based ecFlow suites. This change should be ported there too.

Andrew Dawson - diad_CY45R2_pysuite_variable_repr - BIT IDENTICAL

Use correct variable values in ecFlow definitions (IFS-527)

Some suite variables are set to 'True'/'False' when they should be set to 0/1 (LNOCEANOBS and EPSSVOP). This result of this is that you cannot set these options to anything other than their default values. This is a simple change to the suite definition code to convert the values before setting the variables.

Andrew Dawson - diad_CY45R2_pysuite_eps_nemo_ioserver - BIT IDENTICAL

Support IO server in eps_nemo ecFlow (IFS-529)

Support for the I/O server in eps_nemo experiments was added in IFS-429, a change to the eps_nemo ecFlow suite definition (not available in 45r1, on which IFS-429 was based) is needed to allow it to support this new behaviour properly.

Tomas Kral, Cristian Simarro - datk_CY45R2_for_46R1_v8_intel_tests/datk_CY45R2_intel - BIT IDENTICAL

Capability to build IFS with Intel compiler (IFS-530)

We're aiming to establish a capability to build IFS routinely with multiple compilers, on multiple platforms, with the main emphasis on the workstation builds. Intel is an important compiler that IFS should really be compatible with at all times.

Andrew Dawson - diad_CY45R2_pysuite_eps_nemo_single_precision - BIT IDENTICAL

Support single precision in eps_nemo ecFlow suite (IFS-533)

The changes in IFS-532 allowed the use of single precision ensemble forecasts in CY45R2. One component of this was to add the IFS_PRECISION variable with value $PRECISION_FC to each of the modeleps_nemo tasks in the eps_nemo suite definition. This should be replicated in the ecFlow version of the suite which is new in CY46R1.

Andrew Dawson - diad_CY45R2_pysuite_docs - BIT IDENTICAL

Add existing API documentation to Sphinx for ecFlow suites (IFS-534)

The API documentation is already written in the form of docstrings within the Python code. Each experiment should have its API documentation extracted into the Sphinx documentation. This does not require writing any new documentation, just adding the relevant automodule stubs and index entries to the API documentation files.

Andrew Dawson - diad_CY45R2_for_46R1_v1_python - BIT IDENTICAL

Fix Python test suites in v1 merge (IFS-540)

The merge process has left some of the Python suite definition tests failing. They should be fixed and the changes verified.

Andrew Bennett - diab_CY45R2_arcnemo_fix - BIT IDENTICAL

NEMO archiving tasks incorrectly added for forecasts ¡ 72h (IFS-545)

When running an experiment with long forecast length < 72 hours, pySuite should not be adding the NEMO archiving tasks mppcombnemo and arcnemo to the suite.

Tomas Kral, Kristian Mogensen - datk_CY45R2_cmake_opa - BIT IDENTICAL

Build additional NEMO(QC) tools for the OPA suite (IFS-546)

The following NEMO(QC) tools were added to the IFS/CMake build sytem:

- fbsuperobfix
- make_dmp_file
- pert_wstr_orca
- pert_sst_orca
- NemoQcProg_ExtractAndProcess
- NemoQcProg_BackgroundToNetCDF

Files modified (IFS): `fpgpnorm.F90`

Files modified (NEMO): `CMakeLists.txt CMakeLists.txt obs_fbm.F90 obs_utils.F90 profdata.F90 NemoQc_configuration.cmake CMakeLists.txt`

Tomas Kral, Avi Bahra - datk_CY45R2_fieldman_cce_87 - BIT IDENTICAL

Activate compilation of fieldman with cce8.7.0 (IFS-550)

Linking of fieldman executables had been failing with the following errors:

```
lib/libfieldman.so: undefined reference to `boost::program_options::
    validation_error::get_template[abi:cxx11](boost::program_options::
    validation_error::kind_t)'
lib/libfieldman.so: undefined reference to `boost::program_options::
    invalid_option_value::invalid_option_value(std::__cxx11::basic_string<
    char, std::char_traits<char>, std::allocator<char> > const&)'
...
```

This was due to C++ ABI incompatibility between cce/8.6.2 and cce/8.7.0. Note that Boost libraries had been only available for cce/8.6.2, and so doing module load boost /1.61.0 would load boost /1.61.0/ CRAY/86 rather than CRAY/87. This is now resolved with the installation of Boost libraries for cce/8.7.0, thanks to Avi.

Files modified (CMAKE): `fieldman.cmake`

Andrew Dawson, Andrew Bennett - diad_CY45R2_pysuite_definitions_update - BIT IDENTICAL

Update the pysuite test definitions (IFS-553)

Update the reference definitions by creating them with ecFlow 4.9.0. This will mean all reference definitions (including analysis suites) are generated with the same version of ecFlow, which is the version we use to deploy the suites with prepIFS.

Reference definitions should also be anonymised to prevent problems if the definitions are accidentally run in ecFlow. A generic username like "USER" doesn't have a deploy directory inside /vol/ifs_sms so there is no risk of picking up scripts for such a suite, ecFlow will simply report an error.

Tomas Kral - datk_CY45R2_bit_identity_testing - BIT IDENTICAL

Add bit-identity testing to AN suite (IFS-558)

Add functionality to AN experiments to test for bit-identity with a user-specified reference experiment.

There should be an option to force the experiment to fail via an aborted task in the ecFlow suite if not bit-identical to the reference, to trigger failure of the IFS nightly build.

Andrew Dawson - diad_CY45R2_for_46R1_v0_namarg - BIT IDENTICAL

Update scripts for changed namelist variables (IFS-560)

The variables CUSTOP and UTSTEP have moved from the NAMARG namelist to the NAMRIP namelist and are renamed CSTOP and UTSTEP respectively. Some scripts are not updated to reflect this.

In addition, the NPPBUFLEN variable has been removed from NAMPAR1 but is still supplied by mknam_fp.

Tomas Kral - datk_CY45R2_for_46R1_v1_metab_ci - BIT IDENTICAL

Integrate ifs-bundle in FD's metabuilder CI suite (IFS-565)

This contribution contains a small number of fixes that are necessary to make ifs-bundle work in FD's metabuilder continuous integration (CI) suite.

The metabuilder CI suite is an ecFlow suite that runs every night and tests 'develop' branches of all FD packages on multiple platforms and with different compilers. This contribution adds a capability to test these 'develop' branches with the latest versions of ifs-source & ifs-test projects. At the moment, ifs-bundle is tested on cc(a,b,t), leap42, lxc and ecgb platforms, but more can be added in the future.

To see the metabuilder CI suite in ecFlowUI, you will need to add the server 'ecflow-metab:3142' manually.

Files modified (AEOLUS): `arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_l2bp_primary_ec.F90`

Files modified (ALGOR): `minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_caller.h m1qn3a.F90`

Files modified (ATLAS_APPS): `CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_`

sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_-
wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90
set_halos_fld.F90 CMakeLists.txt dwarf_args_module.F90 dwarf_command_module.F90
dwarf_data_module.F90 dwarf_util_module.F90

Files modified (BL): dynamic_symbols.c mf_blacklist.b

Files modified (CMAKE): algor.cmake bl.cmake compile_flags.cmake dummy.cmake ifs.cmake
ifsaux.cmake intfb.cmake oopsifs.cmake prepdata.cmake satrad.cmake target_-
ignore_missing_symbols.cmake trans.cmake

Files modified (DUMMY): aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_-
suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F
ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_-
horiz_flt.F suefpbip.F sueinfce.F

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90

Files modified (FIELDMAN): FieldSet.hpp

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_tl.F90 cp_forcing.F90 cpedia.F90
cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5_gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_-
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decis.F90 defrun.F90 fgwnd.F90 fscatin.F90 gefger.F90 inifger.F90 kscatin.F90
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heap_oops.F90 gp_model_oops.F90 gp_model_tl_oops.F90 ifs_init.F90 locations_-
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lidsimop.F90 aer_lidsimtl.F90 bgobs.F90 co2slicing.F90 co2slicing_ml.F90 cobs.F90
cobsad.F90 cobsall.F90 cobsallad.F90 cobsalltl.F90 departure_jo.F90 departure_-
joad.F90 departure_jotl.F90 emis_atlas.F90 emis_mw_n.F90 gpsro_2dop.F90 hjo.F90
hop.F90 hop_decide_required_sqls.F90 hqscatt.F90 hradp_ml.F90 hradp_ml_ad.F90
hradp_ml_tl.F90 hretr_conv.F90 hretr_rad.F90 hsatang.F90 mw_clearsky_screen_-
mfdecis.F90 obshor.F90 obshorad.F90 obsop_composition.F90 obsop_conv.F90 obsop_-
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rad1cemis.F90 slint.F90 slintad.F90 commjbbal.F90 commjbdat.F90 dot_product_-
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aer_phy1.F90 aer_phy2.F90 aer_phy3.F90 aer_phy3_layer.F90 aer_rad.F90 aer_-
radon.F90 aer_resuspension.F90 aer_rrtm.F90 aer_scavin.F90 aer_sdust.F90 aer_-
sedim.F90 aer_so2so4.F90 aer_so2so4_v2.F90 aer_src.F90 aer_ssalt.F90 aer_-
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m7_emi.F90 m7_emi_car.F90 m7_emi_dms.F90 m7_emi_du.F90 m7_emi_so2.F90 m7_-
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suafn.F90 suafn1.F90 suafn2.F90 suafn3.F90 sualdyn.F90 sualdynb.F90 suarg.F90
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add_moderr_tl.F90 addhysin.F90 addhysinad.F90 adtest.F90 aerlid_setup.F90 balvert.F90
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suscat.F90 susepfce.F90 suseprenormfce.F90 sushfce.F90 suvar.F90 suvazx.F90
taskob.F90 taskob_thread.F90 taskobad.F90 taskobad_thread.F90 taskobtl.F90
taskobtl_thread.F90 tlprop.F90 tltest.F90 varcalc.F90 varflt_crt.F90 varflt_-
trunc.F90 vec2gp.F90 wavxform.F90 wrchres.F90 writelct.F90 writeoba.F90 writesd.F90
xformev.F90

Files modified (IFSAUX): i_system.c facgrm.F90 fadgra.F90 fagote.F90 faieno.h falgra.h
faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.h isrchfltpv.body.h
lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_mod.F90 mpl_allgatherv_-
mod.F90 mpl_end_mod.F90 mpl_gatherv_mod.F90 yomlun_ifsaux.F90 faconvgrib.F90
abor1.F90 dr_hook_util.F90 drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 hdf_dbase_mod.F90
odb2_dbase_mod.F90 odbserver_dbase_mod.F90 CMakeLists.txt test_dbase_performance.F90
test_dbase_view.F90 test_overhead_odb2.F90 test_parallel_distribute.F90

Files modified (NEMO): diahth.F90 zdfmxl.F90 arch-IBM_EKMAN_INGV.fcm namelist_-
cfg CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref
namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_-
ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90
diaar5.F90 diacfl.F90 diadct.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90
cla.F90 lbclnk.F90 lib_mpp.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90

sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_-
clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90
sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90 traldf.F90 tranxt.F90 trazdf.F90
trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90
zdftmx.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90
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trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort
athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90
compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90
create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam compiler_flags.cmake
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Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
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plot_10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh
plot_sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
oras5_sst_2017.ksh omona_ostia_sst_2017.ksh plot_sst_2017.ksh retrieve_oras4_-
sst_2017.ksh retrieve_oras5_sst_2017.ksh retrieve_ostia_sst_2017.ksh standard_-
areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
netcdfinput.F90 omonadata.F90 omonatypes.F90 orca_grid.F90 spherepolygons.F90
toolspar_kind.F90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
plotnemo plotobs plotobs.F90 plotpoints plotpoints.F90 plotpointsnc plotreg.F90
plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 config.macports config.macportsomp fbaddrename.
fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
coords.F90 config.macports

Files modified (OBSTAT): obstat_def.F90 iniitemloc.F90 inisoftdef.F90 obstat_scat_-
plot.F90 plotsoft.F90 updsoft.F90 writegridstats.F90 writescat.F90 writesoft.F90

Files modified (ODB): CMakeLists.txt cma_open.c b2o_convert.F90 b2o_convert_atms.F90
b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_mwri_1d.F90 b2o_convert_-
oscat.F90 b2o_convert_pilot.F90 b2o_convert_rain_rates.F90 b2o_convert_synop_-
land.F90 b2o_convert_temp_hires.F90 b2o_convert_windprofiler.F90 odb_target_-
ignore_missing_symbols.cmake sat_atovs_hyper.sql sat_atovs_hyper.sql black_-
robody_4.sql decis_robhdr_2.sql robhdr.sql sat_atovs.sql sat_atovs_hyper.sql
b2o_debug.h cmaio.h codb.c twindow.c bator_datetime_mod.F90 bator_decodbufr_-
mod.F90 bator_decodgrib_mod.F90 bator_decodhdf5_mod.F90 bator_decodnetcdf_-
mod.F90 bator_ecritures_mod.F90 bator_impr_mod.F90 bator_init_mod.F90 bator_-
lectures_mod.F90 bator_module.F90 bator_rad_postproc_mod.F90 bator_saisies_-
mod.F90 bator_util_mod.F90 bator_namelist.nam.h Bator.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h AllObs.interface.F90 AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interfac AllObsTLAD.cc AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D. ErrorCovariance3D.h ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90 FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.F90 IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIFS.h LinearModelIFS.interface.F90 LocalizationMatrixIFS LocalizationMatrixIFS.h LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F9 ModelIFS.cc ModelIFS.h ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h ObsBias.interface.F90 ObsBias2.interface.F90 ObsBiasCovariance.c ObsBiasCovariance.h ObsBiasCovariance.interface.F90 ObsBiasCovariance2.interface.F90 ObsBiasCtlVec.cc ObsBiasCtlVec.h ObsBiasCtlVec.interface.F90 ObsBiasCtlVec2.interface ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen ObsBiasLLists.F90 ObsBiasLLists2.F90 ObsSpaceODB.cc ObsSpaceODB.h ObsSpaceODB.interfa ObsVector.cc ObsVector.h ObsVector.interface.F90 StateIFS.cc StateIFS.h Trajectory.li VariablesIFS.interface.F90 ifs_init_wrapper.F90 instantiateTlmFactory.h mpi_- wrapper.F90 pm_link_mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): matutils.F90 chgrib.c fillgaussgrib.F90 unbal_eda.F90 wavelet_add_mod_hcor.F90

Files modified (RADIATION): radiation_aerosol_optics_data.F90

Files modified (SATRAD): getcparam.h mod_cnrm_mw_atlas.F90 mod_cparam.F90 bufr_- screen_reo3_superob.F90 gensatim.F90 rttov_read_ascii_sccldcoef.F90 rttov_- read_coefs.F90 co2cld.F90 getcparam.F90 phrtsetup.F90 rttov_ec.F90 rttov_- ec_ad.F90 rttov_ec_alloc.F90 rttov_ec_alloc_ad.F90 rttov_ec_alloc_tl.F90 rttov_- ec_tl.F90 rttvi.F90 rttov_locpat_ad.F90 rttov_locpat_k.F90 rttov_locpat_tl.F90

Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_- fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_- windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_- bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_- fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surfexcdriver.F90 surfexcdriver.h surfexcdriver_ctl_mod.F90 vexcs_mod.F90 vsurf_mod.F90 suct01s.F90 yomct01s.F90

Files modified (TRANS): dealloc_resol_mod.F90

Files modified (WAM): uras3a.F intwaminput.F yowcoup.F

Patrick Gillies, Tomas Wilhelmsson - dipg_CY45R1_intel_optimisations - BIT IDENTICAL

Bounds error in Intel optimisations (IFS-573)

The latest commit to this branch contains a bug fix. Can this latest change be merged in, thanks!

Files modified (CMAKE): `prepdata.cmake satrad.cmake`

Files modified (IFS): `cpedia.F90 cpg.F90 gprcp.F90 larcin2.F90 larcin2ad.F90 larcina.F90 larcinha.F90 larmes.F90 spcmascor.F90 chem_tm5.F90 spcm.F90 cpcuddh.F90 cpphddhe.F90 grib_code_message.F90 sualfpos.F90 sufpfields.F90 sufpphy.F90 vpos_prep.F90 laitli.F90 laitri.F90 lascaw.F90 rdscaw.F90 io_serv_writefld_ec.F90 field_definitions.F90 field_gfl_wrapper.F90 grib_utils_mod.F90 iostream_mix.F90 radiation_ifs_rrtm.F90 radiation_setup.F90 traj_semilag_mod_oops.F90 type_fpfields.F90 yomgsgeom.F90 yomphyder.F90 yomprad.F90 yomtraj.F90 slint.F90 slintad.F90 aer_drydep.F90 aer_no3nh4.F90 aer_phy3.F90 callpar.F90 cloud_satadj.F90 cloudsc.F90 cloudvar.F90 gwdrags.F90 local_state_ini.F90 su_aerw.F90 wvxf2gb.F90 radaca.F90 raddrv.F90 radintg.F90 suecrad.F90 uvradi.F90 master.F90 suafn1.F90 suct0.F90 sudefo_gflattr.F90 sugfl1.F90 sugfl2.F90 sugfl3.F90 sumpini.F90 sujb.F90`

Files modified (IFSAUX): `deallocate_if_associated_mod.F90 drhook.c ec_meminfo.F90`

Files modified (NEMO): `interinfo.F90 interinfo.F90 nemogcmcoup_wam_coupinit.F90 nemogcmcoup_wam_update_stress.F90`

Files modified (RADIATION): `radiation_aerosol_optics.F90 radiation_cloud_generator.F90 radiation_delta_eddington.h radiation_mcica_lw.F90 radiation_mcica_sw.F90`

Files modified (SATRAD): `bufr_screen_reo3_superob.F90`

Files modified (SURF): `surfexcdriver_ctl_mod.F90`

Andrew Dawson - diad_CY45R2_for_46R1_v1_longrange_fixes - BIT IDENTICAL

Longrange experiment fixes for 46r1 (IFS-575)

The longrange experiment type requires a few minor fixes to function in 46R1 v1:

- The LNEMOCOUP variable needs to be sent to the shell configuration to ensure NEMO gets built (prepIFS)
- The NAMCT0 namelist must supply NCYCLE in (model_nemoIFS script)
- Trigger fix for EDA initialisation without singular vectors

Scripts branch: diad_CY45R2_for_46R1_v1_longrange_fixes

prepIFS branch: diad_CY46R1_longrange_fixes

Patrick Gillies - [No branch] - BIT IDENTICAL

IFS EPS fails in IFLUSHFDB when FDB_MPI_CACHE=yes (IFS-576)

A change was made in 45R1 to ensure that accumulated fields were not output before the accumulation interval was first reached, so a 6 hour accumulation field was not output before 6 hours had passed.

When FDB_MPI_CACHE was enabled this causes a failure as the decision whether to output a field is made during the call to WRITE_RECORD, however by this point ISETFIELDCOUNTFDB had already been called

by GRID_OUT. ISETFIELDCOUNTFDB tells FDB how many fields to expect so when this number is not received with FDB_MPI_CACHE this causes the failure.

The fix for this was to move the calls to ISETFIELDCOUNTFDB from GRID_OUT (and SPEC_OUT) into WRITE_RECORD. An Allreduce is required to get the total number of fields being output across all IO procs. A communicator is created containing only the IO procs so that the collective is only over these procs.

[No branch]

Stephanie Johnson - cxsj_CY45R2_for_46r1_leocwa - BIT IDENTICAL

Making warm skin layer switch on depending on ocean vertical levels (IFS-578)

[No description]

Stephanie Johnson, Andrew Dawson - cxsj_CY45R2_for_46r1_SVEDAmenus/cxsj_CY46R1_for_-46r1_SVEDASmenus - BIT IDENTICAL

Mirroring changes to SV&EDA menus in eps_nemo (IFS-579)

Scripts and defaults branch.

There are several components of this:

- Making all singular vector options shared between eps nemo and longrange
- Setting EPS gamma correctly depending on initialization
- Enabling ERA-5 EDA initialization
- Updating technical tests so they work with the new menus.

Olivier Marsden - daom_CY46_intents - BIT IDENTICAL

erroneous intent for array arguments (IFS-583)

Wrong argument intent is a bug, which could yield incorrect results with aggressive compiler optimisation.

It also breaks initialisation to nans with the Cray compiler.

Files modified (IFS): `cpeuldyn.F90 cpg.F90 cpg_drv.F90 cpgtl.F90 gpgrxyb.F90 gpgrxybtl.F90 gpinislb.F90 laitre_gfl_ad.F90 laitre_gmv_ad.F90 lapinea.F90 larche5.F90 larcina.F90 larcinatl.F90 lavent.F90 aer_phy2.F90 cloudsc.F90 cubasmcn.F90 cubidiagad.F90 cucalln.F90 cucalln2ad.F90 cuddrafn.F90 cudlfsn.F90 cuflxn.F90 cumastrn2ad.F90 satur.F90 saturtl.F90 vdfexcus.F90 vdfexcustl.F90 modgrin.F90 transinv_mdl.F90 transinv_mdlad.F90 rdphtrajt.F90`

Andrew Dawson - diad_CY45R2_for_46R1_v2_fix_eps_getgrb - BIT IDENTICAL

Fix getgrb for multi-leg EPS (IFS-584)

The MARS retrieval for _shml in the getgrb script was refactored in pre-46r1 v2 and is missing the keyword to select a particular ensemble member. This came about because a multi-part retrieval where number was set in the first part and inherited by the remaining parts was split into two separate retrievals, with the second one missing the number keyword. This keyword just needs to be added back in.

Gabor Radnoti - [No branch] - NON-METEOROLOGICAL

Inclusion of default configuration files for operational configuration (IFS-585)

One of the most difficult parts of merging RD changes in operations is working out what are the actual configuration changes required. In RD prepIFS dynamically generates the configuration files used by the scripts (config.*.h) and suite definition (parameters.py). When looking at an RD experiment there is know way to understand whether changes in these files result from an actual required change for the cycle or a simplification for that instance.

Ideally we would like a set of configuration files representing the "default" configuration for a cycle for each experiment type for each cycle. This will make it easy for us to understand the actual configuration changes we need to make in operations.

E.g. Ideally somewhere in the repo for each cycle:

EDA - config.eda.h, parameters.eda.py

HRES - config.hres.h, parameters.hres.py

ENS - config.ens.h, parameters.ens.py

SAW - config.saw,.h, parameters.saw.py

[No branch]

Andrew Dawson - diad_CY45R2_eps_nemo_fdb5 - BIT IDENTICAL

Use FDB5 in eps_nemo (IFS-586)

Enable the use of FDB5 in the eps_nemo experiment. This consists of revising the cleanup scripts to ensure they handle FDB5 correctly and changes to the suite to account for new cleanup procedure.

Since the fdb-wipe tool doesn't support the required keys to safely clean reforecast experiments the FDB cleaning is disabled in reforecast mode. It can be enabled once the fdb-wipe tool supports the hdate key.

The overlay *diad_CY46R1_eps_nemo_fdb5* switches on FDB5 by default in eps_nemo experiments, but will revert to FDB4 in reforecast mode to avoid filling up the FDB in the absence of proper cleaning.

Andrew Dawson - diad_CY45R2_fix_wam_fdb5 - BIT IDENTICAL

Use FDB5 in offline wam (IFS-592)

The offline wam experiment should be able to use FDB5. The changes required are fixing a bug in the source code to ensure the FDB is closed before the chief program exits, and adding FDB5 cases to the FDB cleanup.

The ifs-defaults branch diad_CY46R1_wam_fdb5 makes fdb5 the default for wam experiments.

Files modified (AEOLUS): `arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_l2bp_primary_ec.F90`

Files modified (ALGOR): `minv.F90 minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_caller.h sgemmx.F90 m1qn3a.F90 butterfly_alg_mod.F90`

Files modified (ATLAS_APPS): `CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_module.F90`

Files modified (BL): `dynamic_symbols.c mf_blacklist.b`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake fieldman.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake prepdata.cmake satrad.cmake ssa.cmake target_ignore_missing_symbols.cmake trans.cmake wam.cmake`

Files modified (DUMMY): `aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_horiz_flt.F suefpbip.F sueinfce.F`

Files modified (ECFFTW): `tpm_fftw.F90`

Files modified (ENKF): `obs_base_mod.F90 obs_constants.F90`

Files modified (FIELDMAN): `FieldSet.hpp`

Files modified (IFS): `call_sl.F90 call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90 cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90 cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90 cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 fv_gradient.F90 gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90 gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90 gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90 gnhqe_tndlagadiab_gw.F90 gnhqe_tndlagadiab_svd.F90 gnhqe_xxd.F90 gnhsvd2gw.F90 gnhx.F90 gp_derivatives.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90 gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90 gpgw.F90 gphpre.F90 gpinislb.F90 gpmktend.F90 gpprs0d.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90`

gprcph.F90 gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90
gpvcts.F90 gpvcw.F90 gpxx.F90 lacdyn.F90 lacdynad.F90 lacdynshw.F90 lacdynshwad.F90
lacdynshwtl.F90 lacdyntl.F90 ladad.F90 ladine.F90 ladinead.F90 ladinetl.F90
laitre_gfl_ad.F90 laitre_gmv.F90 lanhqesi.F90 lanhsi.F90 lanhsib.F90 lapinea.F90
lapinea5.F90 lapineaad.F90 lapineatl.F90 lapineb.F90 lapinebad.F90 lapinebtl.F90
larche.F90 larche5.F90 larche_incr.F90 larche_incr_ad.F90 larche_incr_tl.F90
larchead.F90 larchetl.F90 larcin2.F90 larcin2ad.F90 larcin2tl.F90 larcina.F90
larcinaad.F90 larcinatl.F90 larcinb.F90 larcinbad.F90 larcinha.F90 larcinhb.F90
larmes.F90 larmes5.F90 larmes_rk.F90 larmes_rk5.F90 larmes_rk_ad.F90 larmes_-
rk_tl.F90 larmesad.F90 larmestl.F90 lassie.F90 lassietl.F90 latte_bbc.F90 latte_-
kappa.F90 latte_kappaad.F90 latte_kappatl.F90 lattes.F90 lattesad.F90 lattestl.F90
lattex.F90 lavabo.F90 lavabotl.F90 lavent.F90 laventad.F90 laventtl.F90 postphy.F90
si_cccor.F90 sidd.F90 sigam.F90 silkap.F90 silkapi.F90 sinhqe_seve.F90 sinhqe_-
vderi.F90 siptp.F90 siqq.F90 siseve.F90 siskap.F90 siskapi.F90 sitnu.F90 spchor.F90
spcsi.F90 spnh_conv_nhvar.F90 spnh_conv_prhs.F90 spnhqesi.F90 spnhqesi_prodskap.F90
spnhsi.F90 tropo_tep.F90 aro_adjust.h aro_ground_diag.h aro_ground_diag_2isba.h
aro_lima.h aro_rain_ice.h aroini_micro.h aroini_micro_lima.h aroini_nsv.h deello.intf
eapply_pll_recf.intfb.h ebicli.intfb.h ebipos.intfb.h ecoupl1.intfb.h ecoupl1ad.intfb
ecoupl2.intfb.h ecoupl2ad.intfb.h ecvargpad.intfb.h ecvargptl.intfb.h ediagb_-
psot.intfb.h efpfilter.intfb.h eincli1.intfb.h eincli10.intfb.h eincli2.intfb.h
eincli3.intfb.h eincli4.intfb.h eincli5.intfb.h eincli6.intfb.h eincli7.intfb.h
eincli8.intfb.h eincli9.intfb.h einflation_mean.intfb.h elarmesad.intfb.h elascaw.int
elsac.intfb.h elsin0ta.intfb.h elswa3.intfb.h ereadsigmab.intfb.h ereadstd.intfb.h
erlbc_post_req.intfb.h escaljgs.intfb.h eseimpls.intfb.h eseimplsad.intfb.h
esetup_pll_recf.intfb.h eslextpol.intfb.h espcm.intfb.h espfp.intfb.h espnhqesi.intfb
espnhqesi_prodskap.intfb.h etenc.intfb.h etransdir_nhconvprhs.intfb.h etransinv_-
mdl.intfb.h etransinv_nhconv.intfb.h etransinv_nhconvprhs.intfb.h euvcopy.intfb.h
evarjkini.intfb.h ewrlsgrad.intfb.h fp2sx1.h fp2sx2.h fpboyd.intfb.h fpezo2h.intfb.h
fpezone.intfb.h fpfillb.intfb.h gp_horiz_flt.intfb.h gridfpossfx_init.h moevar.intfb.
ncerr.intfb.h posfpbipos.intfb.h prefpbipos.intfb.h prep2_real.h prep_step2.h
rdclimosfx.h readjbbal.intfb.h readjbbal_nc.intfb.h readjbdat96.intfb.h readjbdat96_-
nc.intfb.h suafn1sfx.h suafn2sfx.h suafn3sfx.h suedim.intfb.h suefpbip.intfb.h
suefpg3.intfb.h suegem_naml.intfb.h suehow1.intfb.h suehow2.intfb.h suehowlsm.intfb.h
sueinfce.intfb.h sueinif.intfb.h suejbtest.intfb.h suescal.intfb.h suescal_-
jb.intfb.h suescal_norms.intfb.h sufpcsfx.h sufpezo.intfb.h wrsfx.h cseaice.F90
incli0.F90 incli1.F90 incli10.F90 incli2.F90 incli3.F90 incli4.F90 incli5.F90
incli8.F90 incli9.F90 relnew.F90 simrel.F90 cabane.F90 caclsi.F90 caclsst.F90
caeincw.F90 cagade.F90 caisse.F90 calico.F90 calina.F90 can1.F90 canami.F90
canari.F90 caohis.F90 capotx.F90 caprsurf.F90 carcli.F90 casmswi.F90 bascoe_-
chem_ini.F90 bascoe_hetconst.F90 bascoe_kpp_Rates.F90 bascoe_wetdep.F90 bascoe_-
zenith_fct.F90 bascoetm5_chem_ini.F90 bascoetm5_noymass.F90 chem_bascoe.F90
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chem_n2o.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_diurnal.F90 mocage_-
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aer_phy3_layer.F90 aer_rad.F90 aer_radon.F90 aer_resuspension.F90 aer_rrtm.F90
aer_scavin.F90 aer_sdust.F90 aer_sedim.F90 aer_so2so4.F90 aer_so2so4_v2.F90
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depvel_wsl.F90 diag_clouds.F90 ec_phys.F90 ec_phys_ad.F90 ec_phys_drv.F90 ec_-
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Files modified (IFSAUX): comcha.h comdat.h comddh.h ctlarch.F ctldompf.F ctldomts.F
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param.h rearec.F suarch.F sucom.F sucom2.F swapts.F i_system.c facgrm.F90 fadgra.F90
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faconvgrib.F90 splitps.F abor1.F90 dr_hook_util.F90 dr_hook_util_multi.F90
drhook.c endian.c env.c ifssig.c cxxdemangle.cc ec_meminfo.F90 ec_rank_reorder.F90
linuxtrbk.c tabort.c

Files modified (IFSOBS): CMakeLists.txt History.txt VERSION.cmake config.sh README.md
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CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 netcdf_file_mod.F90 quicksort_-
mod.F90 dbase_factory_mod.F90 hdf_dbase_mod.F90 odb1_dbase_mod.F90 odb2_dbase_-
mod.F90 odbserver_dbase_mod.F90 dbase_kinds_mod.F90 dbase_view_mod.F90 CMakeLists.txt
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match_dbase_mod.F90 partition_dbase_mod.F90 CMakeLists.txt cat_dbase.F90 match_-
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test_match_dbase.sh test_overhead_odb2.F90 test_parallel_distribute.F90 test_-
quicksort.F90

Files modified (NEMO): CMakeLists.txt bal_vel.F90 diahth.F90 divcur.F90 dynhpg.F90 dynldf_bilap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 lib_mpp.F90 ldfslp.F90 obs_grd_bruteforce.h90 obs_types.F90 obssla_types.h90 solpcg.F90 eosbn2.F90 traadv.F90 traadv_tvd.F90 tradmp.F90 traldf_iso.F90 zdfddm.F90 zdfmxl.F90 zdftke.F90 zdftmx.F90 lib_fortran.F90 arch-IBM_EKMAN_INGV.fcm CMakeLists.t namelist_cfg CFCs_CDIAC.dat CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_- age_cfg namelist_age_ref namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_ref makenemo modlinktomodel.F90 modutil.F90 limwri.F90 agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90 diaar5.F90 diacfl.F90 diadct.F90 diahth.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90 divcur.F90 dynhpg.F90 dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90 cla.F90 lbclnk.F90 lib_mpp.F90 ldfslp.F90 diaobs.F90 obs_conv.F90 obs_conv_constants_eos.h90 obs_- conv_functions_eos.h90 obs_grd_bruteforce.h90 obs_oper.F90 obs_types.F90 obs_- write.F90 obssla_types.h90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90 sbcblk_- algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbccpl.F90 sbcflx.F90 sbcice_lim.F90 sbcice_- lim_2.F90 sbcisf.F90 sbcmod.F90 sbcrnf.F90 sbcsglcpl.F90 sbcssr.F90 solpcg.F90 eosbn2.F90 traadv.F90 traadv_eiv.F90 traadv_mle.F90 traadv_tvd.F90 trabbl.F90 tradmp.F90 traldf.F90 traldf_iso.F90 tranxt.F90 trazdf.F90 trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90 zdftmx.F90 lib_fortran.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90 par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_cfc.F90 trcini_- cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_trc.F90 trcnam_my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90 p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90 trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort_athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90 compute_- sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90 create_- bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md 5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90 mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam INSTALL.rst LICENSE README-setup-configs README.rst arch-gfortran_athena_xios.fcm arch-ifort_- athena.fcm arch-ifort_athena_debug.fcm arch-ifort_athena_tools.fcm arch-ifort_- athena_xios.fcm arch-X64_ADA.fcm arch-X64_ADA_DEBUG.fcm arch-X64_ADA_O0.fcm arch-X64_CURIE.fcm arch-X64_IRENE.fcm arch-IBM_EKMAN_INGV.fcm arch-openmpi_- KARA_MERCATOR_XIOS.fcm arch-openmpi_NAVITI_MERCATOR.fcm arch-ALTIX_NAUTILUS_- MPT.fcm arch-THALASSA.fcm arch-X64_MOBILIS.fcm arch-XC_ARCHER.fcm arch-XC_- ARCHER_INTEL.fcm arch-PW7_METO.fcm arch-PW7_MONSOON.fcm arch-XC40_METO.fcm arch-XC40_METO_debug.fcm arch-linux_gfortran.fcm arch-linux_ifort.fcm arch-linux_- ifort_omp.fcm arch-linux_pgf90.fcm arch-osx_gfortran.fcm arch-osx_gfortran_- debug.fcm arch-ALTIX_JADE.fcm arch-BG_BABEL.fcm arch-IA64_PLATINE.fcm arch-PW6MONO_- VARGAS.fcm arch-PW6_VARGAS.fcm arch-SX8_BRODIE.fcm arch-SX8_MERCURE.fcm arch-SX9_- ES2.fcm arch-SX9_MERCURE.fcm arch-TX7_ULAM.fcm arch-X64_TITANE.fcm arch-X86_- CESIUM.fcm arch-ifort_CICLAD.fcm arch-ifort_MERCATOR_CLUSTER.fcm arch-ALTIX_- NAUTILUS.fcm arch-XT6_HECTORcrayftn.fcm arch-pgf90_mobius.fcm arch-PW6_METO.fcm arch-XT6_HECTOR.fcm arch-linux_g95.fcm arch-linux_lahey.fcm arch-linux_nag.fcm arch-linux_pathscale.fcm arch-mpxlf_aix.fcm arch-osx_g95.fcm arch-osx_ifort.fcm

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domain.cpp compute_connectivity_domain.hpp context.cpp context.hpp domain.cpp
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select.sql sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_-
4.sql decis_robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h
sat_atovs.sql sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h
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mod.F90 bator_util_mod.F90 bator_namelist.nam.h ecma2ecmascr Bator.F90 Convert_-
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AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
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GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc

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ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
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rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_

test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90 ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90 mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90 predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_spectra.F90 vol_fracs.F90 rttov_coef_info.F90 rttov_mfasis_lut_info.F90 rttov_print_cld_profile.F90 rttov_print_opts.F90 rttov_print_opts_scatt.F90 rttov_print_profile.F90 rttov_print_radiance_quality.F90 rttov_parallel_ad.F90 rttov_parallel_direct.F90 rttov_parallel_k.F90 rttov_parallel_scatt.F90 rttov_parallel_scatt_ad.F90 rttov_parallel_scatt_tl.F90 rttov_parallel_tl.F90 rttov_k_ad.F90 rttov_k_bf.F90 rttov_k_tl.F90 rttov_make_cld_profile_inc.F90 rttov_make_emisrefl_inc.F90 rttov_make_opt_param.F90 rttov_make_opt_param_inc.F90 rttov_make_pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_scale_cld_profile_inc.F90 rttov_scale_opt_param_inc.F90 rttov_scale_pccomp_inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_test.F90

Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 scan_cma_odb.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h surfws.h osm.cfg sppcflsad_mod.F90 sppcflstl_mod.F90 srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90 srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 suvexc_mod.F90 vexcs_mod.F90 vlamsk_mod.F90 vsurf_mod.F90 yos_exc.F90 callpar1s.F90 cpg1s.F90 dtforc.F90 incdat.F90 netcdf_utils.F90 rdfvar.F90 rdsupr.F90 sucst.F90 suct01s.F90 sudcdf.F90 sufcdf.F90 sugdi1s.F90 sugp1s.F90 suinif1s.F90 sulun1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90 wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 fcttim.h namct01s.h mpl_mod_ctl.F90

Files modified (TRANS): dealloc_resol_mod.F90 ledir_mod.F90 leinv_mod.F90 suleg_mod.F90

Files modified (WAM): getclo.F uras3a.F abort1.F abort1.F90 adjust.F adjust.F90 airsea.F airsea.F90 aki.F aki.F90 aki_ice.F aki_ice.F90 altas.F90 avoidpeaks.F avoidpeaks.F90 betadef.F betadef.F90 bouinpt.F bouinpt.F90 bouint.F bouint.F90 buildstress.F buildstress.F90 cal_second_order_spec.F cal_second_order_spec.F90 check.F check.F90 checkcfl.F checkcfl.F90 chesig.F chesig.F90 chief.F chief.F90 cigetdeac.F cigetdeac.F90 cimsstrn.F cimsstrn.F90 cireduce.F cireduce.F90 ciwabr.F ciwabr.F90 ciwaf.F ciwaf.F90 class_wgrib.F clean_outbs.F closend.F closend.F90 combinepeaks.F combinepeaks.F90 command.F confile.F confile.F90 cpfdb.F create_

wam_bathymetry.F create_wam_bathymetry.F90 create_wam_bathymetry_ETOPO1.F create_-
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integrated_parameter.F90 decode_point_spectra.F decode_point_spectra.F90 dev.F
dev.F90 difdate.F difdate.F90 docombine.F docombine.F90 dotdc.F dotdc.F90 dummy_-
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fkmean.F90 fld2wam.F fld2wam.F90 fldinter.F fldinter.F90 fndprt.F fndprt.F90
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mcout.F90 means.F means.F90 meansqs.F meansqs.F90 mergesarcor.F mergesarcor.F90
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mpdistribfl.F mpdistribfl.F90 mpdistribscfld.F mpdistribscfld.F90 mpexchng.F
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notim.F90 oifield.F oifield.F90 onestepapart.F onestepapart.F90 optint.F optint.F90
out_onegrdpt.F out_onegrdpt.F90 out_onegrdpt_sp.F out_onegrdpt_sp.F90 outbc.F
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outunwamfield.F outunwamfield.F90 outunwamtest.F outunwamtest.F90 outwint.F90
outwnorm.F outwnorm.F90 outwpsp.F90 outwspec.F outwspec.F90 outwspec_io_serv.F90
outxt.F outxt.F90 packi.F packi.F90 packr.F packr.F90 parmean.F parmean.F90
partitioning.F partitioning.F90 peak.F peak.F90 peak_ang.F90 peak_freq.F peak_-
freq.F90 peakfri.F peakfri.F90 preproc.F preproc.F90 preset.F preset.F90 preset_-

wgrib_template.F preset_wgrib_template.F90 prewind.F prewind.F90 propag_wam.F
propag_wam.F90 propags.F propags.F90 propags1.F propags1.F90 propags2.F propags2.F90
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runwam.F90 saras.F saras.F90 savrest.F savspec.F savspec.F90 savstress.F savstress.F9
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secondhh.F90 secondhh_gen.F secondhh_gen.F90 secspom.F secspom.F90 semean.F
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u2l1cr.F90 wam_user_clock.F wam_user_clock.F90 wamadszidl.F wamadszidl.F90
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yowmpiModule.F90 yowmpp.F yowmpp.F90 yownemoflds.F yownemoflds.F90 yownemop.F
yownemop.F90 yownodepool.F90 yowover.F yowparam.F yowparam.F90 yowpcons.F yowpcons.F9
yowpdlibmain.F90 yowphys.F90 yowprproc.F yowprproc.F90 yowrankModule.F90 yowrefd.F
yowrefd.F90 yowsaras.F yowsaras.F90 yowsarinv.F yowshal.F yowshal.F90 yowsidepool.F90
yowspec.F yowspec.F90 yowstat.F yowstat.F90 yowswel.F yowtabl.F yowtabl.F90
yowtemp.F yowtemp.F90 yowtest.F yowtest.F90 yowtext.F yowtext.F90 yowtrains.F
yowtrains.F90 yowubuf.F yowubuf.F90 yowunit.F yowunit.F90 yowunpool.F yowunpool.F90
yowwami.F yowwami.F90 yowwind.F yowwind.F90 yowwndg.F yowwndg.F90

Andrew Dawson, Tim Stockdale - diad_CY45R2_longrange_fdb5 - BIT IDENTICAL

Use FDB5 in longrange experiment (IFS-593)

The longrange experiment should be updated to be able to use FDB5.

Due to mismatches in the way FDB4/FDB5 handle metadata, this implementation is not-backwards compatible with FDB4 for the longrange experiment type (does not affect any other experiment type). This has been agreed with [~net] as the preferred path forward (i.e. longrange experiments will be FDB5 only from CY46R1).

prepIFS defaults: diad_CY46R1_longrange_fdb5

Files modified (AEOLUS): arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_-
l2bp_primary_ec.F90

Files modified (ALGOR): minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_-
caller.h m1qn3a.F90

Files modified (ATLAS_APPS): CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_-
module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_-
module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_-
module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90
dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90

compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_-
weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_-
sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_-
wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90
set_halos_fld.F90 CMakeLists.txt dwarf_module.F90

Files modified (BL): dynamic_symbols.c mf_blacklist.b

Files modified (CMAKE): algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake
fieldman.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake
prepdata.cmake satrad.cmake ssa.cmake target_ignore_missing_symbols.cmake trans.cmake
wam.cmake

Files modified (DUMMY): aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_-
suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F
ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_-
horiz_flt.F suefpbip.F sueinfce.F

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90

Files modified (FIELDMAN): FieldSet.hpp

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90
cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_-
gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_-
dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90
cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90
cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 fv_gradient.F90
gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_-
spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90
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gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_-
conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90
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gnhx.F90 gp_derivatives.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_-
kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90
gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90 gpgw.F90
gphpre.F90 gpinislb.F90 gpmktend.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90 gprcph.F90
gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90 gpvcts.F90
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larche5.F90 larche_incr.F90 larche_incr_ad.F90 larche_incr_tl.F90 larchead.F90
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lavabo.F90 lavabotl.F90 lavent.F90 laventad.F90 laventtl.F90 postphy.F90 si_-
cccor.F90 sidd.F90 sigam.F90 silkap.F90 silkapi.F90 sinhqe_seve.F90 sinhqe_-

vderi.F90 siptp.F90 siqq.F90 siseve.F90 siskap.F90 siskapi.F90 sitnu.F90 spchor.F90
spcsi.F90 spnh_conv_nhvar.F90 spnh_conv_prhs.F90 spnhqesi.F90 spnhqesi_prodskap.F90
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aro_lima.h aro_rain_ice.h aroini_micro.h aroini_micro_lima.h aroini_nsv.h deello.intf
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incli1.F90 incli10.F90 incli2.F90 incli3.F90 incli4.F90 incli5.F90 incli8.F90
incli9.F90 relnew.F90 simrel.F90 cabane.F90 caclsi.F90 caisse.F90 calina.F90
can1.F90 canari.F90 capotx.F90 caprsurf.F90 carcli.F90 casmswi.F90 bascoe_-
chem_ini.F90 bascoe_hetconst.F90 bascoe_kpp_Rates.F90 bascoe_wetdep.F90 bascoe_-
zenith_fct.F90 bascoetm5_chem_ini.F90 bascoetm5_noymass.F90 chem_bascoe.F90
chem_bascoetm5.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90
chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_diurnal.F90 mocage_chem_-
ini.F90 mocage_krat_racmobus.F90 tm5_calrates.F90 tm5_chem_ini.F90 tm5_do_-
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LinearAlgebra.F90 tm5_kpp_Rates.F90 tm5_kpp_initialize.F90 tm5_kpp_update_-
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cva2.F90 forecast_error.F90 fpwrncf.F90 get_clinc.F90 gmassdiag.F90 gp_model.F90
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wrfu.F90 wrgathflnm.F90 wrgrida.F90 wrgridall.F90 wrgridall_fp.F90 wrgridall_-
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fpcordyn.F90 fpcorphy.F90 fpfilter.F90 fpgeo.F90 fpgeophy.F90 fphalo.F90 fpintdyn.F90
fpintphy.F90 fpmodcfu.F90 fpmodprec.F90 fpmodxfu.F90 fpnilphy.F90 fposhor.F90
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spos.F90 sposgf.F90 stepo_fpos.F90 su4fpos.F90 sualfpos.F90 subfpos.F90 sufp_-
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sufpioh.F90 sufpios.F90 sufpmapf.F90 sufpmodelgeo.F90 sufpofname.F90 sufpoph.F90
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dep.F90 suvfpos.F90 suvfposl.F90 suvpos.F90 updvpos.F90 vpos.F90 vpos_prep.F90
wrfpfilter.F90 wrgp2fafp.F90 wrhfp.F90 wrmlfp.F90 wrmlfp_io_serv.F90 wrplfp.F90
wrplfp_io_serv.F90 wrsfp.F90 gbrad_get.F90 gbrad_get_ad.F90 gbrad_get_tl.F90
gbrad_obsop.F90 gbrad_obsop_ad.F90 gbrad_obsop_tl.F90 gbrad_put.F90 gbrad_-
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aer_dust.F90 aer_seasalt.F90 ukca_aero_step.F90 ukca_aero_step_ifs.F90 ukca_-
ageing.F90 ukca_binapara77.F90 ukca_calc_coag_kernel.F90 ukca_calc_drydiam.F90
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ukca_ddepaer.F90 ukca_impc_scav.F90 ukca_ingridg.F90 ukca_mode_ems.F90 ukca_-
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slcomm_obs.F90 slcset.F90 slextpol.F90 slextpol_obs.F90 slextpolad_obs.F90
suehox1.F90 suhow1.F90 suhow2.F90 suhowlsm.F90 suhowlsm.func.h suhox1.F90 suhslmer.F9
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io_serv_recv_req.F90 io_serv_recv_sort.F90 io_serv_recv_term.F90 io_serv_-
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io_serv_send_sort.F90 io_serv_setup_fa.F90 io_serv_suiosctmpl.F90 io_serv_-
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ddh_mix.F90 debug_nproma_mod.F90 drydep_par.F90 ec_phys_fields_mod.F90 eint_-
mod.F90 elbc0a_mod.F90 elbc0b_mod.F90 elbc0c_mod.F90 error_correlations_info_-
mod.F90 extfpselect_mod.F90 factx_mod.F90 fdb_utils_mod.F90 field_container_-
base_mod.F90 field_container_gp_mod.F90 field_container_oper_mod.F90 field_-
definitions.F90 field_gfl_wrapper.F90 fields_base_mod.F90 fields_mod.F90 fullpos.F90
fullpos_mix.F90 fullpos_oops_mod.F90 geometry_mod.F90 geometry_setup_mod.F90
gfl_subs_mod.F90 gmv_subs_mod.F90 gom_mod.F90 gom_plus.F90 grib_handles_mod.F90
grib_utils_mod.F90 gridpoint_fields_mix.F90 ifs_dbase_view_mod.F90 ifsobs_-
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iogrida_mod.F90 iogride_mod.F90 iogridoe_mod.F90 iogridue_mod.F90 iospeca_-
mod.F90 iospece_mod.F90 iostream_mix.F90 ioxfu_mod.F90 jb_control_vectors_-
mod.F90 jb_control_vectors_oper_mod.F90 jb_control_vectors_para_mod.F90 jo_-
table_mod.F90 mfioopts_mod.F90 mocage_chem_module.F90 mocage_tend_racmobus.F90
model_atmos_ocean_coupling_mod.F90 model_chem_mod.F90 model_diagnostics_mod.F90
model_dynamics_mod.F90 model_general_conf_mod.F90 model_lam_coupling_mod.F90
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suvar.F90 suvazx.F90 suvifce.F90 taskob.F90 taskob_thread.F90 taskobad.F90
taskobad_thread.F90 taskobtl.F90 taskobtl_thread.F90 tlprop.F90 tltest.F90
upspec.F90 varcalc.F90 varflt_crt.F90 varflt_trunc.F90 vec2gp.F90 wavxform.F90
wrchres.F90 writelct.F90 writeoba.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): comcha.h comdat.h comddh.h ctlarch.F ctldompf.F ctldomts.F
ctlzon.F decops2.F description_table.dat getarea.F getcom1.F getcom2.F getdom.F

getrec.F getreci.F getzon.F incdat.F invjul.F julday.F namus.h offset.F opone.F
param.h rearec.F suarch.F sucom.F sucom2.F swapts.F i_system.c facgrm.F90 fadgra.F90
fagote.F90 faieno.h falgra.h faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.
isrchfltpv.body.h lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_-
mod.F90 fdbsubs_mod.F90 mpl_allgatherv_mod.F90 mpl_comm_split_mod.F90 mpl_-
end_mod.F90 mpl_gatherv_mod.F90 oml_mod.F90 rttov_const.F90 rttov_ec_mod.F90
yomlun_ifsaux.F90 ddhrun.F faconvgrib.F90 splitps.F abor1.F90 dr_hook_util.F90
drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt History.txt VERSION.cmake config.sh README.md
cat_dbase.md dbase_view_mod.md generate_docs.sh match_dbase.md CMakeLists.txt
CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 netcdf_file_mod.F90 quicksort_-
mod.F90 dbase_factory_mod.F90 hdf_dbase_mod.F90 odb1_dbase_mod.F90 odb2_dbase_-
mod.F90 odbserver_dbase_mod.F90 dbase_kinds_mod.F90 dbase_view_mod.F90 CMakeLists.txt
map_dbase_mod.F90 mapping_aux_funcs.F90 mapping_parser_mod.F90 mappings_mod.F90
match_dbase_mod.F90 partition_dbase_mod.F90 CMakeLists.txt cat_dbase.F90 match_-
dbase.F90 CMakeLists.txt nc_sample_map_dbase.cdl test_map_dbase_bufr_mapping.dat
test_map_dbase_mapping.dat test_convert_dbase_odb1.sh test_cope_repartitioning.F90
test_dbase_performance.F90 test_dbase_view.F90 test_join_views.F90 test_ll.F90
test_match_dbase.sh test_overhead_odb2.F90 test_parallel_distribute.F90 test_-
quicksort.F90

Files modified (NEMO): CMakeLists.txt diahth.F90 divcur.F90 dynhpg.F90 dynldf_-
bilap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 lib_-
mpp.F90 ldfslp.F90 obs_grd_bruteforce.h90 solpcg.F90 eosbn2.F90 traadv.F90
traadv_tvd.F90 tradmp.F90 traldf_iso.F90 zdfddm.F90 zdfmxl.F90 zdftke.F90 zdftmx.F90
lib_fortran.F90 arch-IBM_EKMAN_INGV.fcm namelist_cfg CFCs_CMIP6.dat cfc1112.atm
iodef.xml namelist_age_cfg namelist_age_ref namelist_cfg cpp_ORCA2_LIM_CFC_-
C14b.fcm field_def.xml namelist_cfc_ref namelist_ref makenemo agrif_opa_interp.F90
agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90 diaar5.F90 diacfl.F90 diadct.F90
diahth.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90 divcur.F90 dynhpg.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90
dynzdf_imp.F90 icbtrj.F90 iom.F90 cla.F90 lbclnk.F90 lib_mpp.F90 ldfslp.F90
obs_grd_bruteforce.h90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90 sbcblk_-
algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_clio.F90
sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90 sbcsglcpl.F
solpcg.F90 eosbn2.F90 traadv.F90 traadv_eiv.F90 traadv_mle.F90 traadv_tvd.F90
trabbl.F90 tradmp.F90 traldf.F90 traldf_iso.F90 tranxt.F90 trazdf.F90 trd_-
oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90 zdftmx.F90
lib_fortran.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90
par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_-
cfc.F90 trcini_cfc.F90 trcnam_cfc.F90 trcsms_cfc.F90 par_my_trc.F90 trcnam_-
my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90
p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90
trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort
athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90
compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90
create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90

mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam CMakeLists.txt obs_-
fbm.F90 obs_utils.F90 profdata.F90 NemoQc_configuration.cmake arch_configuration.cmak
arch_keys_Intel.cmake compiler_flags.cmake compiler_flags_Intel_CXX.cmake compiler_-
flags_Intel_Fortran.cmake compiler_flags_PGI_Fortran.cmake tools_configuration.cmake
tools_keys_Intel.cmake fcmcmake.ksh fcmcsmake.ksh fcmnmake.ksh fcmsmake.ksh
fcmxiosmake.ksh CMakeLists.txt nemogcmcoup_exflds_get.F90 nemogcmcoup_lim2_-
update.F90 nemogcmcoup_mlflds_get.F90 nemogcmcoup_mlinit.F90 nemohth.F90 griblsm.F90
nemogribcoup.f90 nemogribcoupmpmd.f90 in_out_manager.F90 modhookdummy.F90 nctools.F90
nemogcmcoup_coupinit.F90 nemogcmcoup_coupinit_mpmd.F90 nemogcmcoup_end_ioserver.F90
nemogcmcoup_exflds_get.F90 nemogcmcoup_final.F90 nemogcmcoup_get.F90 nemogcmcoup_-
get_1way.F90 nemogcmcoup_get_mpmd.F90 nemogcmcoup_init.F90 nemogcmcoup_init_-
ioserver.F90 nemogcmcoup_init_ioserver_2.F90 nemogcmcoup_lim2_get.F90 nemogcmcoup_-
lim2_update.F90 nemogcmcoup_step.F90 nemogcmcoup_update.F90 nemogcmcoup_update_-
add.F90 nemogcmcoup_update_mpmd.F90 nemogcmcoup_wam_coupinit.F90 nemogcmcoup_-
wam_get.F90 nemogcmcoup_wam_update.F90 nemogcmcoup_wam_update_stress.F90 timing.F90
date_utils.F90 gribfluxes.F90 griblsm.F90 gribtools.F90 oceaninput.F90 toolspar_-
kind.F90 nemopseudo.F90 nemopseudompmd.F90 nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg ioserver.cfg
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to_simocn_gauss_1pts_cca.ksh dists_atm_to_simocn_gauss_4pts_cca.ksh dists_-
atm_to_simocn_gauss_oasis3_cca.ksh dists_simocn_gauss_to_atm_1pts_cca.ksh dists_-
simocn_gauss_to_atm_4pts_cca.ksh dists_simocn_gauss_to_atm_oasis3_cca.ksh remap_-
atm_to_simocn_gauss_1pt_cca.ksh remap_atm_to_simocn_gauss_4pt_cca.ksh remap_-
atm_to_simocn_gauss_oasis3_cca.ksh remap_simocn_gauss_to_atm_1pt_cca.ksh remap_-
simocn_gauss_to_atm_4pt_cca.ksh remap_simocn_gauss_to_atm_oasis3_cca.ksh simocngausst
cray_inner.ksh cray_mppcomb.ksh cray_outer.ksh getecfstestdata.ksh namelist.nemo.ORCA
Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_ORCA1_Z46 setup_namelist_outer_ORCA1_Z75 setup_namelist_outer_io setup_-
outer_data swan_inner.ksh swan_outer.ksh cray_outer.ksh getecfstestdata.ksh
field_def.xml field_def_xios2.xml iodef_default.xml iodef_default_xios2.xml
iodef_single_xios2.xml namelist_cfg.ORCA025_Z75 namelist_cfg.ORCA1_Z42 namelist_-
ice_cfg.ORCA025 namelist_ice_cfg.ORCA1 namelist_ref ompi_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_io setup_namelist_xios setup_outer_data cdfmoc.f90 CMakeLists.txt config.macpor
Makefile config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90
config.cray ecatmosbufrdata.F90 ecsstbufrdata.F90 Makefile config gribdcoast.F90
griblsm.F90 griblsmwam.F90 gribtools.F90 config.macports Makefile config griblsm.F90
gribthin.F90 gribtools.F90 index_sort.F90 nctools.F90 obs_fbm.F90 obs_utils.F90
toolspar_kind.F90 icecdamp.F90 config.cray config.crayomp config.macports config.macp
config.opensuse131 config.opensuse131mpiomp config.opensuse131omp getsst.F90
griblsm.F90 orca_grid.F90 remapfluxes.F90 remapsst.F90 remapsstgauss.F90 scripsst.F90
grid2kml kmlgrid.F90 kmlgridmod.F90 Makefile areadata.F90 config ctl_stop.h90
date_utils.F90 amona_go66go65_sfc.ksh amona_go66go65_sfc_masked.ksh amona_-
go66go65_ua.ksh amona_go66go65_waves.ksh omona_go66_1h.ksh omona_go66_3h.ksh
plot_10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh

plot_sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
oras5_sst_2017.ksh omona_ostia_sst_2017.ksh plot_sst_2017.ksh retrieve_oras4_-
sst_2017.ksh retrieve_oras5_sst_2017.ksh retrieve_ostia_sst_2017.ksh standard_-
areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
netcdfinput.F90 omonadata.F90 omonatypes.F90 orca_grid.F90 spherepolygons.F90
toolspar_kind.F90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
plotnemo plotobs plotobs.F90 plotpoints plotpoints.F90 plotpointsnc plotreg.F90
plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 config.macports config.macportsomp fbaddrename.
fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
coords.F90 config.macports

Files modified (OBSTAT): obstat_def.F90 iniitemloc.F90 inisoftdef.F90 obstat_scat_-
plot.F90 plotsoft.F90 updsoft.F90 writegridstats.F90 writescat.F90 writesoft.F90

Files modified (ODB): CMakeLists.txt cma_open.c b2o_amend.F90 b2o_convert.F90 b2o_-
convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_-
atovs.F90 b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_gmi.F90 b2o_-
convert_grad.F90 b2o_convert_iasi.F90 b2o_convert_modisaer.F90 b2o_convert_-
msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_oscat.F90 b2o_convert_pilot.F90
b2o_convert_rain_rates.F90 b2o_convert_reo3.F90 b2o_convert_ssmis_1d.F90 b2o_-
convert_synop_land.F90 b2o_convert_tamdar.F90 b2o_convert_temp.F90 b2o_convert_-
temp_hires.F90 b2o_convert_windprofiler.F90 b2o_crc.c calc_azim.F90 get_varindex.F90
odb_target_ignore_missing_symbols.cmake genc.c sat_atovs_hyper.sql scat_ambig_-
select.sql sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_-
4.sql decis_robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h
sat_atovs.sql sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h
b2o_debug.h cmaio.h odb_assoc_cols.h odb_it_members.h calc_azim.h codb.c datastream.F
twindow.c b2o_functional.F90 b2o_get.F90 b2o_utility.F90 varindex_module.F90
bator_datetime_mod.F90 bator_decodbufr_mod.F90 bator_decodgrib_mod.F90 bator_-
decodhdf5_mod.F90 bator_decodnetcdf_mod.F90 bator_ecritures_mod.F90 bator_-
impr_mod.F90 bator_init_mod.F90 bator_lectures_mod.F90 bator_module.F90 bator_-
rad_postproc_mod.F90 bator_saisies_mod.F90 bator_util_mod.F90 bator_namelist.nam.h
ecma2ecmascr Bator.F90 Convert_dbase.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h
AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria

AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90
FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h
GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc
IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.
IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF
LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h
LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 Logbook.interface.F90
LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h
ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h
ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte
ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90
ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen
ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.c
ObsBiasIncrementVARBC.h ObsBiasIncrementVARBC.interface.F90 ObsBiasLListsTOVSCV.F90
ObsBiasLListsVARBC.F90 ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90
ObsBiasVARBC.cc ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsSpaceODB.cc ObsSpaceODB.
ObsSpaceODB.interface.F90 ObsVector.cc ObsVector.h ObsVector.interface.F90
StateIFS.cc StateIFS.h Trajectory.list.F90 VariablesIFS.interface.F90 ifs_-
init_wrapper.F90 instantiateObsAuxFactories.h instantiateObsErrorFactory.h
instantiateObsOpFactories.h instantiateTlmFactory.h mpi_wrapper.F90 pm_link_-
mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): matutils.F90 chgrib.c fillgaussgrib.F90 unbal_eda.F90
wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90
radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-
gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-
ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-
optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-
mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-
optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-
save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-
spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90
radiation_tripleclouds_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): throw.h find_lsm.h get_lsm.h getcparam.h cparam.F90 gaussgrid.F90
mod_camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_mie.F90 mod_-
mwatlas_m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_atlas.F90 mod_-
rttov_fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_test.F90 mod_-
screen_1c_bufrmsg.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90
rttov_chain.F90 rttov_coef_io_mod.F90 rttov_ec_settings.F90 rttov_fast_coef_-

utils_mod.F90 rttov_getoptions.F90 rttov_global.F90 rttov_hdf_chanprof_io.F90
rttov_hdf_coefs.F90 rttov_hdf_emissivity_io.F90 rttov_hdf_options_config_-
io.F90 rttov_hdf_options_rt_all_io.F90 rttov_hdf_options_rt_ir_io.F90 rttov_-
hdf_options_rt_mw_io.F90 rttov_hdf_profile_io.F90 rttov_hdf_profiles.F90 rttov_-
hdf_radiance_io.F90 rttov_hdf_reflectance_io.F90 rttov_hdf_rttov_coef_io.F90
rttov_hdf_rttov_coef_pcc_io.F90 rttov_htfrtc_interface_mod.F90 rttov_interface_-
mod.F90 rttov_lapack_mod.F90 rttov_math_mod.F90 rttov_scattering_mod.F90 rttov_-
solar_refl_mod.F90 rttov_tessem_mod.F90 rttov_test_k_mod.F90 rttov_test_mod.F90
rttov_types.F90 rttov_unix_env.F90 rttov_zutility.F90 mwave_ec_setopts.F90
mwave_emis_rttov.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_-
rttov_ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_-
screen.F90 bufr_screen_amsr2_1d.F90 bufr_screen_gmi_1d.F90 bufr_screen_nexrad.F90
bufr_screen_reo3_superob.F90 bufr_screen_ssmis_1d.F90 create_aer_clim_prof.F90
example_aer_file_fwd.F90 example_aer_param_fwd.F90 example_cld_file_fwd.F90
example_cld_param_fwd.F90 example_fwd.F90 example_htfrtc_fwd.F90 example_-
k.F90 example_pc_fwd.F90 example_rttovscatt_fwd.F90 gensatim.F90 geos_prescreen.F90
old_screen_1c.F90 rttov_aer_clim_prof.F90 rttov_bpr_calc.F90 rttov_bpr_init.F90
rttov_coef_info.F90 rttov_conv_coef.F90 rttov_scatt_make_coef.F90 rttov_test.F90
rttov_test_get_pc_predictindex.F90 rttov_us76_prof.F90 rttovscatt_test.F90
rttovscatt_test_one.F90 rtlimb_hat.F90 rtlimb_hat_ad.F90 rtlimb_hat_tl.F90
rttov_distribute_coef.F90 rttov_distribute_coef_pccomp.F90 rttov_distribute_-
coef_scatt_ir.F90 rttov_distribute_coefs.F90 rttov_distribute_optpar_ir.F90
rttov_distribute_scattcoeffs.F90 rttov_channel_extract_mfasis.F90 rttov_channel_-
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Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h surfws.h osm.cfg srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90 srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_-mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_-ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 suvexc_-mod.F90 vexcs_mod.F90 vlamsk_mod.F90 vsurf_mod.F90 yos_exc.F90 callpar1s.F90 cpg1s.F90 dtforc.F90 netcdf_utils.F90 rdsupr.F90 suct01s.F90 sudcdf.F90 sugdi1s.F90 sugp1s.F90 suinif1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90 wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 namct01s.h mpl_-mod_ctl.F90

Files modified (TRANS): dealloc_resol_mod.F90

Files modified (WAM): getclo.F uras3a.F abort1.F abort1.F90 adjust.F adjust.F90 airsea.F airsea.F90 aki.F aki.F90 aki_ice.F aki_ice.F90 altas.F90 avoidpeaks.F avoidpeaks.F90 betadef.F betadef.F90 bouinpt.F bouinpt.F90 bouint.F bouint.F90 buildstress.F buildstress.F90 cal_second_order_spec.F cal_second_order_spec.F90 check.F check.F90 checkcfl.F checkcfl.F90 chesig.F chesig.F90 chief.F chief.F90 cigetdeac.F cigetdeac.F90 cimsstrn.F cimsstrn.F90 cireduce.F cireduce.F90 ciwabr.F ciwabr.F90 ciwaf.F ciwaf.F90 class_wgrib.F clean_outbs.F closend.F closend.F90

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mfredir.F mfredir.F90 mgrid.F mgrid.F90 micep.F micep.F90 mintf.F mintf.F90
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wgrib_template.F preset_wgrib_template.F90 prewind.F prewind.F90 propag_wam.F
propag_wam.F90 propags.F propags.F90 propags1.F propags1.F90 propags2.F propags2.F90
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wam_library_gnu extract_WAM_code readme run_bouint_workstation run_preproc.fine_-
workstation run_preproc_workstation run_preset.fine_workstation run_preset_-
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outcom.intfb.h outers.intfb.h outgrid.intfb.h outint.intfb.h outint_io_serv.intfb.h
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z0wave.intfb.h coupling_var.F90 output_struct.F90 pgmcl_lib_wam.F90 unstruct_-
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netcdf_fct.F90 wav_netcdf_var.F90 yow_rank_gloloc.F90 yowaltas.F yowaltas.F90
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yowconst_2nd.F yowconst_2nd.F90 yowcoup.F yowcoup.F90 yowcout.F yowcout.F90
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yowwami.F yowwami.F90 yowwind.F yowwind.F90 yowwndg.F yowwndg.F90

Andrew Dawson - diad_CY45R2_pysuite_parameters_access_control - BIT IDENTICAL

Prevent external access to configuration parameters in pysuite (IFS-598)

This is a bit-identical change to the new Python suite definitions. Its purpose is to enforce the rule of not accessing configuration parameters outside the configuration interface.

Tomas Wilhelmsson - dipl_CY45R1_storeobs_fix - BIT IDENTICAL

Fix bug in msgpass_storeobs triggered in rare circumstances. (IFS-602)

A bug has been discovered in the routine responsible for writing data to ODB files on disk that can result in corrupted data files.

Downstream applications crash if the problem has occurred (e.g. final trajectory, or odb_migrator) and given that this code has been running in IFS for the last 3-4 years and has only just been spotted indicates that the conditions required to trigger it must be very rare.

The fix is bit-identical and I think should be considered for a late 46r1 contribution.

Files modified (ODB): `msgpass_storeobs.F90`

Andrew Dawson - diad_CY45R2_pysuite_test_ecflow_version - BIT IDENTICAL

Update the ecFlow version used for suite testing (IFS-604)

The version of ecFlow used for testing suite definitions should match the version used to deploy experiments. We now used the ecflow/ prepifs labelled module for deployment so the tests should be updated to match.

Tomas Wilhelmsson - nepo_CY45R2_eppes_update_forCY46R1 - BIT IDENTICAL

Introduce a new namelist item that is passed ultimately to vdftofdc.F90. Updates to passive EPPES Fortran routines. (IFS-609)

Introduces an additional namelist parameter, RTOFDALPHA, to model physics. YDVDF type was not passed to the subroutine using the namelist item (vdftofdc.F90) so had to expand the parameters passed on from vdfmain.F90 call to the subroutine.

Also updates parameter estimation (EPPES) routines written in Fortran, these routines are passive by default (activated through a prepIFS switch).

Merged with nat_CY45R2_for_46R1_v6 after the bit-identicality bug was fixed.

prepIFS branch:nepo_CY46R1_eppes

Files modified (AEOLUS): `arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_l2bp_primary_ec.F90`

Files modified (ALGOR): `minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_8.h minv_caller.h m1qn3a.F90`

Files modified (ATLAS_APPS): `CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90 dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90 compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90 set_halos_fld.F90 CMakeLists.txt dwarf_args_module.F90 dwarf_command_module.F90 dwarf_data_module.F90 dwarf_util_module.F90`

Files modified (BL): `dynamic_symbols.c mf_blacklist.b`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake prepdata.cmake satrad.cmake ssa.cmake target_ignore_missing_symbols.cmake trans.cmake wam.cmake`

Files modified (DUMMY): aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_-
suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F
ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_-
horiz_flt.F suefpbip.F sueinfce.F

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90

Files modified (FIELDMAN): FieldSet.hpp

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90
cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_-
gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_-
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cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 fv_gradient.F90
gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_-
spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90
gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90
gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_-
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gphpre.F90 gpinislb.F90 gpmktend.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90 gprcph.F90
gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90 gpvcts.F90
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lapineatl.F90 lapineb.F90 lapinebad.F90 lapinebtl.F90 larche.F90 larche5.F90
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chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_diurnal.F90 mocage_chem_-
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cormassdry.F90 updcli.F90 updclie.F90 updclie_co2.F90 updcpl.F90 updnemoocean.F90
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reresf.F90 restart_cnt3.F90 scan2m.F90 scan2mad.F90 scan2mtl.F90 sim4d.F90
spcm.F90 stepo.F90 stepoad.F90 stepotl.F90 testli.F90 testlievol.F90 tracmf.F90
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sedimentation.F90 m7_wetdep.F90 nemoaddflds_layer.F90 noconvection.F90 o3chem.F90
phys_arrays_ini.F90 postphy_layer.F90 rndecay.F90 sltend.F90 state_copy.F90
state_increment.F90 state_update.F90 stochpert_layer.F90 store_traj_phys_-
layer.F90 su_aer_climatology3d.F90 su_aerm7.F90 su_aerop.F90 su_aerp.F90 su_-
aerw.F90 sucldp.F90 sucumf.F90 suecaec.F90 suecozv.F90 suphec.F90 suphli.F90

surfbc_layer.F90 surfrad_layer.F90 surftstp_layer.F90 surftstp_s_layer.F90
surfws_layer.F90 suvdf.F90 turbulence_layer.F90 turbulence_s_layer.F90 vdfdifh.F90
vdfeis.F90 vdfexcu.F90 vdfhghtn.F90 vdfmain.F90 vdfouter.F90 vdftke.F90 vdftofdc.F90
wv_io_serv_rec.F90 wv_io_serv_suiosctmpl.F90 wv_wgribencode_io_serv.F90 wvcouple.F90
wvcouple_init_early.F90 wvcouple_update_grib_handles.F90 wvxf2gb.F90 acraneb2.F90
ice_effective_radius.F90 modify_wv_continuum.F90 radact.F90 radcfg.F90 raddrv.F90
radflux_layer.F90 radiation_scheme.F90 radintg.F90 radlswad.F90 radlswr.F90
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ad.F90 aerod_op.F90 aerod_tl.F90 apache.F90 pos.F90 pos_prepgfl.F90 ppch4.F90
ppgeop.F90 ppleta.F90 ppltp.F90 ppltw.F90 ppobsac.F90 ppobsap.F90 ppreq.F90
ppreset.F90 pprh.F90 ppsta.F90 ppthpw.F90 ppwetpoint.F90 hop_driver.F90 master.F90
merge_varbc.F90 unbal_eda.F90 raingg_get.F90 raingg_get_ad.F90 raingg_get_-
tl.F90 raingg_obsop.F90 raingg_obsop_ad.F90 raingg_obsop_tl.F90 raingg_put.F90
raingg_put_tl.F90 raingg_screen.F90 raingg_setup.F90 raingg_wrapper.F90 sekf_-
geteda_jacobians.F90 sekf_write.F90 sm_ekf_main.F90 susekf.F90 cmoctmap.F90
cmoctmap_inv.F90 get_spp_conf.F90 gp_sstaqua.F90 modgrin.F90 su0phy.F90 su0yoma.F90
su0yomb.F90 su1yom.F90 su_grib_api.F90 su_surf_flds.F90 suafn.F90 suafn1.F90
suafn2.F90 suafn3.F90 sualdyn.F90 sualdynb.F90 suarg.F90 suarg_datestuff.F90
suatlas_mesh.F90 submat.F90 sucfu.F90 sucst.F90 suct0.F90 suctrl_gflattr.F90
sudcmip12_spec.F90 sudcmip16_gu.F90 sudcmip16_spec.F90 sudefo_gflattr.F90 sudefo_-
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sugrclia.F90 sugrib.F90 sugrida.F90 sugridf.F90 sugridg.F90 sugridu.F90 sugridua.F90
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sulega.F90 sumcc.F90 sumcclag.F90 sumcuf.F90 sumisc_gu.F90 sumisc_spec.F90
sump0.F90 sumts.F90 sunh_vertfe1d.F90 sunh_vertfe1dd.F90 sunh_vertfe3d.F90
sunh_vertfe3dbc.F90 sunh_vertfe3dd.F90 sunh_vertfespline.F90 sunh_vertfespline_-
half.F90 sunh_vertfespline_inv.F90 sunhbmat.F90 sunhheg.F90 sunhqebmat.F90
sunhqesi.F90 sunhsi.F90 sunhsi_testconv.F90 suoph.F90 suoph0.F90 suoptproma.F90
suorog.F90 supp.F90 suptrgppc.F90 surand2.F90 surcordi.F90 surcordi_th.F90
surgri.F90 surip.F90 surip0.F90 susatsim.F90 susavtend.F90 susc2b.F90 susi.F90
susimpr.F90 suslad2.F90 suslb.F90 suspe0.F90 suspec.F90 suspeca.F90 suspeca_-
gp.F90 suspeca_map_part1.F90 suspecb.F90 suspecg.F90 suspecg2.F90 suspsdt.F90
susta.F90 susta_conv_prhs.F90 susta_conv_prhs_dyncore.F90 sustadlr.F90 suvareps.F90
suvert.F90 suvert2.F90 suvertdlr.F90 suvertfe.F90 suvertfe1.F90 suvertfe3.F90
suvertfe3d.F90 suvertfeb.F90 suvfe_basis.F90 suvfe_cpsplines.F90 suvfe_implicitbc.F90
suvfe_knot.F90 suvfe_matrix.F90 suvfe_oper_setup.F90 suvfe_testoper.F90 suvv1.F90
suxfu.F90 traj_setup.F90 balanced_reduction.F90 cun2.F90 eof_matrix.F90 nalan1.F90
opk.F90 rdtllcz.F90 sulcz.F90 wrtllcz.F90 wrtsv.F90 transdir_fields.F90 transdir_-
fp.F90 transdir_nhconvprhs.F90 transdir_wavelet.F90 transdir_waveletad.F90
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transinv_wavelet.F90 transinv_waveletad.F90 transinvad_fields.F90 transinvh.F90
add3to5.F90 add5to3.F90 addbgs.F90 addfgs.F90 dealfpos.F90 dealsc2.F90 dealsekf.F90
dealspa.F90 dverint.F90 filedate.F90 final_stats.F90 gpnorm_gfl.F90 grib_-
mean.f90 gribioflush.F90 gstats_label_ifs.F90 interp_gp.F90 link.f90 matrixin.F90
maxgpfv.F90 mod_ini.F90 modeltojb.F90 modeltojbad.F90 opdis.F90 openfa.F90

openfainfo.F90 prepacka.F90 prt_ctlvec_norms.F90 random_ctlvec.F90 rdfa2gp.F90
rdspec.F90 readmask.F90 reset_accfie_vareps.F90 save_evecs.F90 save_test4dinc.F90
savmoderr.F90 sbs5to3.F90 sbsbgs.F90 sbsfgs.F90 state2spec.F90 state2specad.F90
sualspa1.F90 suspvariables.F90 updtim.F90 verdisint.F90 verint.F90 wrgp2fa.F90
write_ctlvec_grib.F90 write_grid_grib.F90 write_wavelet_initcv_grib.F90 wrresf.F90
add_moderr_tl.F90 addhysin.F90 addhysinad.F90 adtest.F90 aerlid_setup.F90 balvert.F90
balvertad.F90 balverti.F90 balvertiad.F90 bgevecs.F90 bgpert.F90 bgvecs.F90
cain.F90 cainad.F90 cainin.F90 caininad.F90 chavar.F90 chavarad.F90 chavarin.F90
chavarinad.F90 chkobtim.F90 congrad.F90 cosjl.F90 cosjr.F90 cossmq.F90 cvar2.F90
cvar2ad.F90 cvar2in.F90 cvar2inad.F90 cvar3.F90 cvar3ad.F90 cvar3in.F90 cvar3inad.F90
cvargpad.F90 cvargptl.F90 djbdy.F90 estsig.F90 estsiga.F90 evcost.F90 fltbgerr.F90
get_traj_phys.F90 getmini.F90 getmini2.F90 getsatid.F90 grbspa.F90 grbspa_-
mf.F90 grtest.F90 inflation_pert.F90 jb_wav_var.F90 jbtoacv.F90 jbtomodel.F90
jbtomodelad.F90 jbvcor_wavelet.F90 jbvcor_waveletad.F90 jbvcor_waveletin.F90
jbvcor_waveletinad.F90 jbvcorg.F90 jgcor.F90 jgcorad.F90 jgcori.F90 jgcoriad.F90
jgnr.F90 jgnrad.F90 jgnri.F90 jgnriad.F90 jgvcor.F90 lchtcalc.F90 litest.F90
monitoring_summary.F90 preppcm.F90 rd801.F90 rdfpinc.F90 read_surfgrid_traj.F90
readvec.F90 savmini.F90 savmini2.F90 setjbhybacv.F90 setqccma.F90 setran.F90
sqrtb.F90 sqrtbad.F90 sqrtbin.F90 sqrtbinad.F90 suacv.F90 sualctv.F90 sualges.F90
suallr.F90 suallt.F90 suanebuf.F90 suecges.F90 suensmem.F90 suinep.F90 suineplap.F90
suinfce.F90 suinrenormfce.F90 suiomi.F90 sujb.F90 sujbbal.F90 sujbcor.F90 sujbcosu.F90
sujbdat.F90 sujbhybacv.F90 sujbstd.F90 sujbtest.F90 sujbvarens.F90 sujbwavelet.F90
sujbwavelet0.F90 sujbwavelet_stdevs.F90 sujbwavgen.F90 sujbwavgen_hybraw.F90
sujbwavrenorm.F90 sujbwavstats.F90 sujbwavvc.F90 sujbwavwri.F90 sumdfce.F90
sumoderr.F90 suprecov.F90 suprfep.F90 suqnorm.F90 surad.F90 surinc.F90 suscal.F90
suscal_jb.F90 suscal_norms.F90 suscat.F90 susepfce.F90 suseprenormfce.F90 sushfce.F90
suvar.F90 suvazx.F90 suvifce.F90 taskob.F90 taskob_thread.F90 taskobad.F90
taskobad_thread.F90 taskobtl.F90 taskobtl_thread.F90 tlprop.F90 tltest.F90
upspec.F90 varcalc.F90 varflt_crt.F90 varflt_trunc.F90 vec2gp.F90 wavxform.F90
wrchres.F90 writelct.F90 writeoba.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): i_system.c facgrm.F90 fadgra.F90 fagote.F90 faieno.h falgra.h
faquin.F90 grib_get_api_version.c ec_mpi_finalize.intfb.h isrchfltpv.body.h
lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_mod.F90 mpl_allgatherv_-
mod.F90 mpl_comm_split_mod.F90 mpl_end_mod.F90 mpl_gatherv_mod.F90 rttov_-
const.F90 rttov_ec_mod.F90 yomlun_ifsaux.F90 faconvgrib.F90 abor1.F90 dr_-
hook_util.F90 drhook.c env.c ifssig.c ec_meminfo.F90 linuxtrbk.c

Files modified (IFSOBS): CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 hdf_dbase_mod.F90
odb2_dbase_mod.F90 odbserver_dbase_mod.F90 CMakeLists.txt test_dbase_performance.F90
test_dbase_view.F90 test_overhead_odb2.F90 test_parallel_distribute.F90

Files modified (NEMO): diahth.F90 zdfmxl.F90 arch-IBM_EKMAN_INGV.fcm namelist_-
cfg CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_age_cfg namelist_age_ref
namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_-
ref makenemo agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90
diaar5.F90 diacfl.F90 diadct.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90
dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90
cla.F90 lbclnk.F90 lib_mpp.F90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90

sbcblk_algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_-
clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbcice_lim.F90 sbcice_lim_2.F90 sbcmod.F90
sbcsglcpl.F90 eosbn2.F90 traadv_eiv.F90 trabbl.F90 traldf.F90 tranxt.F90 trazdf.F90
trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90
zdftmx.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90
par_age.F90 trcnam_age.F90 par_c14b.F90 trcnam_c14b.F90 trcsms_c14b.F90 par_-
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my_trc.F90 p4zlim.F90 p4zlys.F90 p4zmeso.F90 p4zmicro.F90 p4zrem.F90 p4zsbc.F90
p4zsed.F90 p4zsms.F90 sms_pisces.F90 trcnxt.F90 trcrad.F90 trcbc.F90 trcdta.F90
trcice.F90 trcini.F90 trcnam.F90 trcsms.F90 trcwri.F90 batch-ifort_athena batch-ifort
athena_xios sette.sh Fdel_keys.sh agrif_create_bathy.f90 agrif_readwrite.f90
compute_sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90
create_bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam arch_configuration.cmake
arch_keys_Intel.cmake compiler_flags.cmake compiler_flags_Intel_CXX.cmake compiler_-
flags_Intel_Fortran.cmake compiler_flags_PGI_Fortran.cmake tools_configuration.cmake
tools_keys_Intel.cmake fcmcmake.ksh fcmcsmake.ksh fcmnmake.ksh fcmsmake.ksh
fcmxiosmake.ksh CMakeLists.txt nemogcmcoup_exflds_get.F90 nemogcmcoup_lim2_-
update.F90 nemogcmcoup_mlflds_get.F90 nemogcmcoup_mlinit.F90 nemohth.F90 griblsm.F90
nemogribcoup.f90 nemogribcoupmpmd.f90 in_out_manager.F90 modhookdummy.F90 nctools.F90
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ioserver.F90 nemogcmcoup_init_ioserver_2.F90 nemogcmcoup_lim2_get.F90 nemogcmcoup_-
lim2_update.F90 nemogcmcoup_step.F90 nemogcmcoup_update.F90 nemogcmcoup_update_-
add.F90 nemogcmcoup_update_mpmd.F90 nemogcmcoup_wam_coupinit.F90 nemogcmcoup_-
wam_get.F90 nemogcmcoup_wam_update.F90 nemogcmcoup_wam_update_stress.F90 timing.F90
date_utils.F90 gribfluxes.F90 griblsm.F90 gribtools.F90 oceaninput.F90 toolspar_-
kind.F90 nemopseudo.F90 nemopseudompmd.F90 nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg
nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg ioserver.cfg
ioserver.cfg nemo.cfg nemo.cfg nemo.cfg ioserver.cfg nemo.cfg nemo.cfg ioserver.cfg
nemo.cfg ioserver.cfg nemo.cfg coupsim.cfg coupsim.cfg tools.cfg dists_atm_-
to_simocn_gauss_1pts_cca.ksh dists_atm_to_simocn_gauss_4pts_cca.ksh dists_-
atm_to_simocn_gauss_oasis3_cca.ksh dists_simocn_gauss_to_atm_1pts_cca.ksh dists_-
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cray_inner.ksh cray_mppcomb.ksh cray_outer.ksh getecfstestdata.ksh namelist.nemo.ORCA
Z75 ompi_outer.ksh poec2a_inner.ksh poec2a_mppcomb.ksh poec2a_outer.ksh setup_-
namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_ORCA1_Z46 setup_namelist_outer_ORCA1_Z75 setup_namelist_outer_io setup_-
outer_data swan_inner.ksh swan_outer.ksh cray_outer.ksh getecfstestdata.ksh
field_def.xml field_def_xios2.xml iodef_default.xml iodef_default_xios2.xml
iodef_single_xios2.xml namelist_cfg.ORCA025_Z75 namelist_cfg.ORCA1_Z42 namelist_-
ice_cfg.ORCA025 namelist_ice_cfg.ORCA1 namelist_ref ompi_outer.ksh setup_-

namelist_outer_ORCA025_Z75 setup_namelist_outer_ORCA1_Z42 setup_namelist_-
outer_io setup_namelist_xios setup_outer_data cdfmoc.f90 config.macports Makefile
config diag_offline.F90 nctools.F90 orca_grid.F90 toolspar_kind.F90 config.cray
ecatmosbufrdata.F90 ecsstbufrdata.F90 Makefile config gribdcoast.F90 griblsm.F90
griblsmwam.F90 gribtools.F90 config.macports Makefile config griblsm.F90 gribthin.F90
gribtools.F90 index_sort.F90 nctools.F90 obs_fbm.F90 obs_utils.F90 toolspar_-
kind.F90 icecdamp.F90 config.cray config.crayomp config.macports config.macportsomp
config.opensuse131 config.opensuse131mpiomp config.opensuse131omp getsst.F90
griblsm.F90 orca_grid.F90 remapfluxes.F90 remapsst.F90 remapsstgauss.F90 scripsst.F90
grid2kml kmlgrid.F90 kmlgridmod.F90 Makefile areadata.F90 config ctl_stop.h90
date_utils.F90 amona_go66go65_sfc.ksh amona_go66go65_sfc_masked.ksh amona_-
go66go65_ua.ksh amona_go66go65_waves.ksh omona_go66_1h.ksh omona_go66_3h.ksh
plot_10lvls_potemp.ksh plot_lvls_air_temp.ksh plot_sst.ksh plot_sst_t2m.ksh
plot_sst_t2m_masked.ksh plot_swh.ksh retrieve_go66_20150901_ocean.ksh retrieve_-
go66go65_20150901_atmos_sfc.ksh retrieve_go66go65_20150901_atmos_ua.ksh retrieve_-
go66go65_20150901_atmos_wam.ksh README amona_seas5.ksh omona_seas5.ksh plot_-
sst_seas5.ksh retrieve_seas5_20180301.ksh README omona_oras4_sst_2017.ksh omona_-
oras5_sst_2017.ksh omona_ostia_sst_2017.ksh plot_sst_2017.ksh retrieve_oras4_-
sst_2017.ksh retrieve_oras5_sst_2017.ksh retrieve_ostia_sst_2017.ksh standard_-
areas.dat standard_omona.dat greg2jul.h90 gribinput.F90 griblsm.F90 gribtools.F90
index_sort.F90 jul2greg.h90 ncorcainput.F90 nctools.F90 ncts.F90 ncts_io.F90
ncts_output.F90 ncts_stats.F90 ncts_timeseries.F90 nctsplot.F90 nctsprint.F90
netcdfinput.F90 omonadata.F90 omonatypes.F90 orca_grid.F90 spherepolygons.F90
toolspar_kind.F90 Makefile colours.F90 config.macports config.opensuse131_-
double iverdata.F90 nemomagics.F90 plotgeneric.F90 plotgrib plotgrib.F90 plotgribm
plotgribmagics.F90 plotiver plotiver.F90 plotkml.F90 plotmagics.F90 plotmona
plotnemo plotobs plotobs.F90 plotpoints plotpoints.F90 plotpointsnc plotreg.F90
plotremap plotscrip regfields.F90 config.macports config.macports lapack.F
Makefile config.opensuse131 nctools.F90 nrltonc.F90 toolspar_kind.F90 config.macports
Makefile obsfbinter.F90 obsfbinterexps.F90 obsfbintermod.F90 config.macports
config.macports Makefile ascii2fb.F90 config.macports config.macportsomp fbaddrename.
fbext2add.F90 fbstat.F90 fbsuperobml.F90 fbwhiteblacklist.F90 ghrsst2fb.F90
ghrsstdata.F90 insi2pot.F90 simobs2fb.F90 Makefile cdfio_mona.F90 omona.F90
omonadata.F90 omonainfo.F90 omonatypes.F90 oat_io.F90 Makefile config griblsm.F90
gribtools.F90 tendmask.F90 tendmasklat.F90 tendmaskpoly.F90 tendmaskspread.F90
coords.F90 config.macports

Files modified (OBSTAT): obstat_def.F90 iniitemloc.F90 inisoftdef.F90 obstat_scat_-
plot.F90 plotsoft.F90 updsoft.F90 writegridstats.F90 writescat.F90 writesoft.F90

Files modified (ODB): CMakeLists.txt cma_open.c b2o_amend.F90 b2o_convert.F90 b2o_-
convert_amsr2_1d.F90 b2o_convert_asr.F90 b2o_convert_atms.F90 b2o_convert_-
atovs.F90 b2o_convert_cris.F90 b2o_convert_fscat.F90 b2o_convert_gmi.F90 b2o_-
convert_grad.F90 b2o_convert_iasi.F90 b2o_convert_modisaer.F90 b2o_convert_-
msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_oscat.F90 b2o_convert_pilot.F90
b2o_convert_rain_rates.F90 b2o_convert_reo3.F90 b2o_convert_ssmis_1d.F90 b2o_-
convert_synop_land.F90 b2o_convert_tamdar.F90 b2o_convert_temp.F90 b2o_convert_-
temp_hires.F90 b2o_convert_windprofiler.F90 b2o_crc.c calc_azim.F90 get_varindex.F90
odb_target_ignore_missing_symbols.cmake sat_atovs_hyper.sql scat_ambig_select.sql

sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_4.sql decis_-
robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h sat_atovs.sql
sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h b2o_debug.h
cmaio.h odb_assoc_cols.h odb_it_members.h calc_azim.h codb.c datastream.F90
twindow.c b2o_functional.F90 b2o_get.F90 b2o_utility.F90 varindex_module.F90
bator_datetime_mod.F90 bator_decodbufr_mod.F90 bator_decodgrib_mod.F90 bator_-
decodhdf5_mod.F90 bator_decodnetcdf_mod.F90 bator_ecritures_mod.F90 bator_-
impr_mod.F90 bator_init_mod.F90 bator_lectures_mod.F90 bator_module.F90 bator_-
rad_postproc_mod.F90 bator_saisies_mod.F90 bator_util_mod.F90 bator_namelist.nam.h
ecma2ecmascr Bator.F90

Files modified (OOPSIFS): CMakeLists.txt FindIFS.cmake ifs4dvar.cc AllObs.cc AllObs.h
AllObs.interface.F90 AllObsBiasCovariance.cc AllObsBiasCovariance.h AllObsBiasCovaria
AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90
FieldsIFS.list.F90 GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h
GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc
IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.
IncrModCtlVecLList.F90 IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc LinearModelIF
LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMatrixIFS.h
LocalizationMatrixIFS.interface.F90 LocationsIFS.interface.F90 Logbook.interface.F90
LogbookIFS.h ModelBiasCovariance.h ModelBiasCtlVec.h ModelIFS.cc ModelIFS.h
ModelIFS.interface.F90 ModelIFS.list.F90 ODB.list.F90 ObsBias.cc ObsBias.h
ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte
ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90
ObsBiasIncrement.cc ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsBiasIncremen
ObsBiasIncrementTOVSCV.h ObsBiasIncrementTOVSCV.interface.F90 ObsBiasIncrementVARBC.c
ObsBiasIncrementVARBC.h ObsBiasIncrementVARBC.interface.F90 ObsBiasLListsTOVSCV.F90
ObsBiasLListsVARBC.F90 ObsBiasTOVSCV.cc ObsBiasTOVSCV.h ObsBiasTOVSCV.interface.F90
ObsBiasVARBC.cc ObsBiasVARBC.h ObsBiasVARBC.interface.F90 ObsSpaceODB.cc ObsSpaceODB.
ObsSpaceODB.interface.F90 ObsVector.cc ObsVector.h ObsVector.interface.F90
StateIFS.cc StateIFS.h Trajectory.list.F90 VariablesIFS.interface.F90 ifs_-
init_wrapper.F90 instantiateObsAuxFactories.h instantiateObsErrorFactory.h
instantiateObsOpFactories.h instantiateTlmFactory.h mpi_wrapper.F90 pm_link_-
mod.F90 pm_linked_list_mod.F90

Files modified (PREPDATA): eppes.F90 eppes_ini_vars.F90 eppes_version.h matutils.F90
mcmcprec.F90 mcmcrand.F90 chgrib.c eppes_ini_form.F90 eppes_ini_nam.nam.h eppes_-
routine.F90 fillgaussgrib.F90 unbal_eda.F90 wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
adding_ica_sw.F90 radiation_aerosol_optics.F90 radiation_aerosol_optics_data.F90
radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_flux.F90 radiation_-
gas.F90 radiation_homogeneous_lw.F90 radiation_homogeneous_sw.F90 radiation_-

ice_optics_baran2016.F90 radiation_ice_optics_baran2017.F90 radiation_ice_-
optics_yi.F90 radiation_lw_derivatives.F90 radiation_matrix.F90 radiation_-
mcica_lw.F90 radiation_mcica_sw.F90 radiation_monochromatic.F90 radiation_-
optical_depth_scaling.h radiation_overlap.F90 radiation_pdf_sampler.F90 radiation_-
save.F90 radiation_single_level.F90 radiation_spartacus_lw.F90 radiation_-
spartacus_sw.F90 radiation_thermodynamics.F90 radiation_tripleclouds_lw.F90
radiation_tripleclouds_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): throw.h find_lsm.h get_lsm.h getcparam.h gaussgrid.F90 mod_-
camel_atlas.F90 mod_cnrm_mw_atlas.F90 mod_cparam.F90 mod_mie.F90 mod_mwatlas_-
m2.F90 mod_rttov_baran2014_icldata.F90 mod_rttov_emis_atlas.F90 mod_rttov_-
fastem3_coef.F90 mod_rttov_fastem5_coef.F90 mod_rttovscatt_test.F90 mod_screen_-
1c_bufrmsg.F90 mod_uwiremis_atlas.F90 mwave_const.F90 rttov_bpr_mod.F90 rttov_-
chain.F90 rttov_coef_io_mod.F90 rttov_ec_settings.F90 rttov_fast_coef_utils_-
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hdf_options_rt_all_io.F90 rttov_hdf_options_rt_ir_io.F90 rttov_hdf_options_-
rt_mw_io.F90 rttov_hdf_profile_io.F90 rttov_hdf_profiles.F90 rttov_hdf_radiance_-
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ad.F90 mwave_obsop_rttov_tl.F90 find_lsm.F90 get_lsm.F90 bufr_grid_screen.F90
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bufr_screen_ssmis_1d.F90 create_aer_clim_prof.F90 example_aer_file_fwd.F90
example_aer_param_fwd.F90 example_cld_file_fwd.F90 example_cld_param_fwd.F90
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rttov_write_ascii_sccldcoef.F90 rttov_write_binary_mfasis_file.F90 rttov_-
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calcemis_ir_k.F90 rttov_calcemis_ir_tl.F90 rttov_calcemis_mw_ad.F90 rttov_-
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transmit_9_solar.F90 rttov_transmit_9_solar_ad.F90 rttov_transmit_9_solar_-
k.F90 rttov_transmit_9_solar_tl.F90 rttov_transmit_ad.F90 rttov_transmit_-
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ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_-
tl.F90 rttov_iniscatt.F90 rttov_iniscatt_ad.F90 rttov_iniscatt_tl.F90 rttov_-
integratesource.F90 rttov_integratesource_ad.F90 rttov_integratesource_tl.F90
rttov_mieproc.F90 rttov_mieproc_ad.F90 rttov_mieproc_tl.F90 rttov_nullify_-
scattcoeffs.F90 rttov_scatt.F90 rttov_scatt_ad.F90 rttov_scatt_emis_retrieval.F90
rttov_scatt_emis_terms.F90 rttov_scatt_setupindex.F90 rttov_scatt_tl.F90 rttovscatt_
test_one.F90 convert_mietable.F90 density_all.F90 gamma_dsd.F90 get_dia.F90
ice_density.F90 liu_dda.F90 liu_density.F90 melting_layer.F90 mg_ellips.F90
mie_coated_sphere.F90 mie_one_temp.F90 mie_one_wc.F90 mie_sphere.F90 mod_-
gamma_dsd.F90 n0_t.F90 perm_ice.F90 perm_melt.F90 perm_water.F90 permittivity.F90
predict_mom07.F90 predict_psd.F90 predict_psd_F07.F90 scattering.F90 set_-
spectra.F90 vol_fracs.F90 rttov_coef_info.F90 rttov_mfasis_lut_info.F90 rttov_-
print_cld_profile.F90 rttov_print_opts.F90 rttov_print_opts_scatt.F90 rttov_-
print_profile.F90 rttov_print_radiance_quality.F90 rttov_parallel_ad.F90 rttov_-
parallel_direct.F90 rttov_parallel_k.F90 rttov_parallel_scatt.F90 rttov_parallel_-
scatt_ad.F90 rttov_parallel_scatt_tl.F90 rttov_parallel_tl.F90 rttov_k_ad.F90
rttov_k_bf.F90 rttov_k_tl.F90 rttov_make_cld_profile_inc.F90 rttov_make_emisrefl_-
inc.F90 rttov_make_opt_param.F90 rttov_make_opt_param_inc.F90 rttov_make_-
pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_-
scale_cld_profile_inc.F90 rttov_scale_opt_param_inc.F90 rttov_scale_pccomp_-
inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_-
test.F90

Files modified (SCAT): fscat_bufr.F fscat_flag.F fscat_wind.F kscat_wind.F decode_-
fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_-
windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_-
bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_-
fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h
surfws.h osm.cfg srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90
srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_-
mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_-
ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 suvexc_-
mod.F90 vexcs_mod.F90 vlamsk_mod.F90 vsurf_mod.F90 yos_exc.F90 callpar1s.F90

cpg1s.F90 dtforc.F90 netcdf_utils.F90 rdsupr.F90 suct01s.F90 sudcdf.F90 sugdi1s.F90
sugp1s.F90 suinif1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90
wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 mpl_mod_ctl.F90

Files modified (TRANS): dealloc_resol_mod.F90

Files modified (WAM): getclo.F uras3a.F abort1.F abort1.F90 adjust.F adjust.F90
airsea.F airsea.F90 aki.F aki.F90 aki_ice.F aki_ice.F90 altas.F90 avoidpeaks.F
avoidpeaks.F90 betadef.F betadef.F90 bouinpt.F bouinpt.F90 bouint.F bouint.F90
buildstress.F buildstress.F90 cal_second_order_spec.F cal_second_order_spec.F90
check.F check.F90 checkcfl.F checkcfl.F90 chesig.F chesig.F90 chief.F chief.F90
cigetdeac.F cigetdeac.F90 cimsstrn.F cimsstrn.F90 cireduce.F cireduce.F90 ciwabr.F
ciwabr.F90 ciwaf.F ciwaf.F90 class_wgrib.F clean_outbs.F closend.F closend.F90
combinepeaks.F combinepeaks.F90 command.F confile.F confile.F90 cpfdb.F create_-
wam_bathymetry.F create_wam_bathymetry.F90 create_wam_bathymetry_ETOPO1.F create_-
wam_bathymetry_ETOPO1.F90 crossas.F crossas.F90 crossw.F crossw.F90 ctuw.F
ctuw.F90 current2wam.F current2wam.F90 decode_integrated_parameter.F decode_-
integrated_parameter.F90 decode_point_spectra.F decode_point_spectra.F90 dev.F
dev.F90 difdate.F difdate.F90 docombine.F docombine.F90 dotdc.F dotdc.F90 dummy_-
alt.F dummy_alt.F90 dummy_cray.F dummy_eclib.F dummy_eclib.F90 dummy_fdb.F
dummy_fdb.F90 dummy_mp.F dummy_mp.F90 dummy_no_assimil.F dummy_no_assimil.F90
dummy_no_nemo.F dummy_no_nemo.F90 ersfile.F ersfile.F90 expand_string.F expand_-
string.F90 fdur.F fdur.F90 femean.F femean.F90 femeanws.F femeanws.F90 file_-
transfer.F file_transfer.F90 fillgaps.F fillgaps.F90 findb.F findb.F90 fkmean.F
fkmean.F90 fld2wam.F fld2wam.F90 fldinter.F fldinter.F90 fndprt.F fndprt.F90
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grstname.F grstname.F90 gsfile_new.F gsfile_new.F90 h_max.F h_max.F90 halfspread.F
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implsch.F90 incdate.F incdate.F90 inisnonlin.F inisnonlin.F90 init_fieldg.F
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iniwcst.F90 intpol.F intpol.F90 intspec.F intspec.F90 intwaminput.F intwaminput.F90
inwgrib.F inwgrib.F90 iwam_get_unit.F90 jafu.F jafu.F90 jonswap.F jonswap.F90
kerkei.F kerkei.F90 kgribsize.F kgribsize.F90 kurtosis.F kurtosis.F90 kzeone.F
kzeone.F90 lasttwobins.F lasttwobins.F90 llalloc_grdfld.F loc2glo.F lowenergy.F
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mcout.F90 means.F means.F90 meansqs.F meansqs.F90 mergesarcor.F mergesarcor.F90
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mpmdl4alt.F90 mpminmaxavg.F90 mppewithindist.F mppewithindist.F90 mpuserin.F
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outnam.F outnam.F90 outpp.F outpp.F90 outsetwmask.F90 outspec.F90 outspp.F
outunwamfield.F outunwamfield.F90 outunwamtest.F outunwamtest.F90 outwint.F90
outwnorm.F outwnorm.F90 outwpsp.F90 outwspec.F outwspec.F90 outwspec_io_serv.F90
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freq.F90 peakfri.F peakfri.F90 preproc.F preproc.F90 preset.F preset.F90 preset_-
wgrib_template.F preset_wgrib_template.F90 prewind.F prewind.F90 propag_wam.F
propag_wam.F90 propags.F propags.F90 propags1.F propags1.F90 propags2.F propags2.F90
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runwam.F90 saras.F saras.F90 savrest.F savspec.F savspec.F90 savstress.F savstress.F9
sbottom.F sbottom.F90 scosfl.F scosfl.F90 sdepthlim.F90 sdissip.F90 sdissip_-
ard.F90 sdissip_jan.F sdissip_jan.F90 sdiwbk.F sdiwbk.F90 se10mean.F se10mean.F90
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secondhh.F90 secondhh_gen.F secondhh_gen.F90 secspom.F secspom.F90 semean.F
semean.F90 sep3tr.F sep3tr.F90 sepwisw.F sepwisw.F90 set_wflags.F set_wflags.F90
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phi_hf.F90 tauhf.F taut_z0.F taut_z0.F90 threshhold.F threshhold.F90 timin.F
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transf_r.F90 transf_snl.F90 transmeans.F transmeans.F90 transpart.F transpart.F90
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wam_sorti.F90 wam_sortini.F90 wam_syminv.F wam_syminv.F90 wam_u2l1cr.F wam_-
u2l1cr.F90 wam_user_clock.F wam_user_clock.F90 wamadszidl.F wamadszidl.F90
wamassi.F wamassi.F90 wamcur.F wamcur.F90 wamendnemoio.F90 wamininemoio.F wamininemoi
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wam_library_gnu extract_WAM_code readme run_bouint_workstation run_preproc.fine_-
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adjust.intfb.h airsea.intfb.h aki.intfb.h aki_ice.intfb.h avoidpeaks.intfb.h
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ctuw.intfb.h current2wam.intfb.h dev.intfb.h difdate.intfb.h docombine.intfb.h
dotdc.intfb.h ersfile.intfb.h expand_string.intfb.h fdur.intfb.h femean.intfb.h
femeanws.intfb.h file_transfer.intfb.h fillgaps.intfb.h findb.intfb.h fkmean.intfb.h
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grib2wgrid.intfb.h grstname.intfb.h gsfile_new.intfb.h h_max.intfb.h halfspread.intfb
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loc2glo.intfb.h lowenergy.intfb.h makeframes.intfb.h makegrid.intfb.h mblock.intfb.h
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notim.intfb.h oifield.intfb.h onestepapart.intfb.h optint.intfb.h out_onegrdpt.intfb.
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wvalloc.intfb.h wvdealloc.intfb.h wvwamdecomp.intfb.h wvwaminit.intfb.h wvwaminit1.in
z0wave.intfb.h coupling_var.F90 output_struct.F90 pgmcl_lib_wam.F90 unstruct_-
bound.F90 unstruct_curr.F90 unstruct_wind.F90 unwam.F90 wav_netcdf.F90 wav_-
netcdf_fct.F90 wav_netcdf_var.F90 yow_rank_gloloc.F90 yowaltas.F yowaltas.F90
yowcard.F yowcard.F90 yowchecksmodule.F90 yowcinp.F yowcinp.F90 yowcoer.F yowcoer.F90
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yowcpbo.F yowcpbo.F90 yowcurg.F yowcurg.F90 yowcurr.F yowcurr.F90 yowdatapool.F90
yowdes.F yowdes.F90 yowelementpool.F90 yowerror.F90 yowexchangeModule.F90 yowfpbo.F
yowfpbo.F90 yowfred.F yowfred.F90 yowgap.F yowgap.F90 yowgrib_handles.F yowgrib_-
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yowpdlibmain.F90 yowphys.F90 yowprproc.F yowprproc.F90 yowrankModule.F90 yowrefd.F
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yowwami.F yowwami.F90 yowwind.F yowwind.F90 yowwndg.F yowwndg.F90

Andrew Bennett, Andrew Dawson - diab_CY45R2_pysuite_user_guide - BIT IDENTICAL

Improve pySuite documentation (IFS-612)

This change introduces re-organised and clearer documentation and a deployment mechanism to Confluence.

Gabor Radnoti, Jean Bidlot - [No branch] - BIT IDENTICAL

Update generatingProcessIdentifier fields (IFS-614)

Update generatingProcessIdentifier for atmospheric, wave and standalone wave model, e.g. as shown at:

[https://confluence.ecmwf.int/display/FCST/Implementation+of+IFS+cycle+45r1#ImplementationofIFScycle45r1-Technicaldetailsofthenewcycle]

FAO: [~usl].

[No branch]

Tomas Wilhelmsson - nat_CY46R1_hub_height - BIT IDENTICAL

New near-surface height levels for wind outputs (IFS-616)

Users have requested new hub-height wind outputs for wind energy applications at 200m. Currently we have only 100m wind - new level to be added using same methodology. This should be for both ENS and HRES.

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (CMAKE): `algor.cmake bl.cmake compile_flags.cmake crm.cmake ecfftw.cmake enkf.cmake ifs.cmake ifsaux.cmake mpi_serial.cmake obstat.cmake odbport.cmake prepdata.cmake radiation.cmake satrad.cmake scat.cmake ssa.cmake surf.cmake target_ignore_missing_symbols.cmake trans.cmake wam.cmake`

Files modified (DUMMY): `incdate.F`

Files modified (IFS): `cpedia.F90 fv_gradient.F90 gp_derivatives.F90 postphy.F90 compo_-diurnal.F90 reresf.F90 satsim.F90 sufpc.F90 sufpfields.F90 aer_dust.F90 io_-serv_suiosctmpl.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 control_vectors_comm_mod.F90 fdb_utils_mod.F90 fullpos_-oops_mod.F90 parfpos.F90 radiation_setup.F90 type_fpfields.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 yomfpc.F90 yomsatsim.F90 namfpc.nam.h namsatsim.nam.h airepbe.F90 dribube.F90 paobbe.F90 pilotbe.F90 ptendcor.F90 synopbe.F90 tempbe.F90 interchan_obserr_cor.F90 aer_phy3.F90 aer_src.F90 climaer_layer.F90 cuadjtq.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 su0yoma.F90 su0yomb.F90 su_surf_flds.F90 suafn2.F90 suorog.F90 susatsim.F90 mod_ini.F90 updtim.F90 getmini.F90 getmini2.F90 savmini.F90 suinfce.F90 sujbwavwri.F90`

Files modified (IFSAUX): `fdbsubs_mod.F90`

Files modified (NEMO): `CMakeLists.txt compiler_flags_Intel_Fortran.cmake`

Files modified (OBSTAT): `obstat_def.F90 inisoftarea.F90 inisoftdef.F90 inisoftinstr.F90 plotsoft.F90 updsoft.F90`

Files modified (ODB): `CMakeLists.txt b2o_amend.F90 b2o_convert_grad.F90 b2o_convert_-msg.F90 b2o_decode.F90 get_varindex.F90 hdr.h b2o_internal.F90 varindex_module.F90`

Files modified (SATRAD): `mod_screen_1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F90`

Files modified (SURF): `cotworestress_mod.F90`

Files modified (WAM): `cal_second_order_spec.F90 ctuw.F90 h_max.F90 inwgrib.F90 kurtosis.F90 mpcrtbl.F90 peak_ang.F90 wgrib2fdb.F90`

Gabor Radnoti - [No branch] - BIT IDENTICAL

New PV level at 1.5 units (IFS-617)

Replicate the current products available on PV=2 level for PV=1.5, for both HRES and ENS

[No branch]

Tomas Wilhelmsson - mps_CY45R1_raps18dev - BIT IDENTICAL

RAPS 18 (IFS-619)

RAPS18 update with

- Fixes for single precision
- Improved portability
- Reduced memory footprint

A summary of the changes:

algor/external/linalg/minv.F90 ! single/double precision related change

ecfftw/module/tpm_fftw.F90 ! pull the FFTW3 include file from the installation directory rather than from a fixed location ! NEC Aurora port to use their specific high performance FFTW

ifs/adiab/gpprs0d.F90 ! single/double precision related change

ifs/adiab/spnhsi.F90 ! NEC Aurora workarounds

ifs/canari/canami.F90 ! NEC Aurora workarounds

ifs/control/cnt0.F90 ! when running (say) 6h FC with oper output on, it sets RESTART flag to 'R' and fails with STOP 30 -- commented out

ifs/dia/wrpgr.F90 ! single precision issue when calling EMOS routine CODEPS ! mod disabled (hence #if 0) since RAPS18 uses modified EMOS lib where this error has been fixed -- not yet passed to the EMOS developers

ifs/fp_serv/fp_serv_init_part1.F90 ! NEC Aurora port

ifs/fullpos/sufpdistrib.F90 ifs/fullpos/sufpg2.F90 ! NEC Aurora workarounds

ifs/interpol/laiddiobs.F90 ! single precision issue caused (probably) by the RADINTG bug ! now anyway safer without noticeable performance penalties

ifs/io_serv/io_serv_close_ec.F90 ! required due to FDB5 MULTIO functionality

ifs/io_serv/io_serv_init_part1.F90 ! NEC Aurora port ! Display NAMIO_SERV namelist settings in the STD-OUT

ifs/io_serv/io_serv_map_send_part1.F90 ifs/io_serv/io_serv_reclaim_buf_space.F90 ifs/io_serv/io_serv_recv_mdl.F90 ifs/io_serv/io_serv_recv_term.F90 ifs/io_serv/io_serv_send_mdl.F90 ifs/io_serv/io_serv_sync_sort.F90 ! More compact (& correct) output by using the I0 -format for integers

ifs/module/gom_mod.F90 ! NEC Aurora workarounds (they don't have C_SIZEOF for instance)

ifs/module/iostream_mix.F90 ! Removal of large allocation (ZREC) ! NGSTA(2:) initialization to a correct -huge() value

ifs/module/varbc_eval.F90 ifs/module/varbc_pred.F90 ! NEC Aurora workarounds

ifs/module/yomlcz.F90 ! Genuine F2008 (?) bug discovered with GNU Fortran 8.2

ifs/op_obs/reflsim.F90 ifs/op_obs/reflsim_2dop.F90 ifs/phys_dmn/acmrip.F90 ifs/phys_dmn/acmris.F90 ifs/phys_dmn/acptke.F90 ifs/phys_dmn/actkehmt.F90 ! failures spotted by the NEC Aurora Fortran compiler in single precision builds

ifs/phys_radi/lwprclair.F90 ifs/phys_radi/lwprnuage.F90 ! single precision clean-up

ifs/phys_radi/radintg.F90 ! Using constants for LLDEBUG* variables -- leads to a better dead-code elimination ! Use I0 -format for debug output ! Print out IFLDSIN/OUT/TOT -- used to chase the issue in RADINTG ! Initializing a number of Z-arrays to get RADINTG working correctly ! Calls for LAID*OBS corrected : intent INOUT for last argument was potentially indicating wrong length upon copy-back ! We should not need the LAIDDIOBS change after this (the famous "should not need" ...)

ifs/programs/master.F90 ! Capturing MPI startup cost (script needs export MPI_EPOCH=$(date +%s.%N) just before launching IFS)

ifs/setup/sugrib.F90 ! Diagnostic output now prints NSTREAM with NLOCGRB

ifs/setup/sumpini.F90 ! NEC Aurora port

ifs/utility/verintad.F90 ! single precision clean-up

ifsaux/eclite/i_system.c ! NEC Aurora port

ifsaux/fa/facgrm.F90 ! single precision clean-up

ifsaux/hack/bt.c ! NEC Aurora port

ifsaux/include/cas.h ifsaux/include/drhook.h ! NEC Aurora port

ifsaux/include/ec_rank_reorder.intfb.h ! New EC_RANK_REORDER routine's interface block (this may never be used)

ifsaux/module/mpl_arg_mod.F90 ! Calls to getarg & iargc changed to use standard calls get_command_argument & command_argument_count

ifsaux/module/sdl_mod.F90 ! NEC Aurora port ! MPI_Abort should *always* be called with MPI_COMM_WORLD or potentially non-KCOMM tasks will hang

ifsaux/module/sharedmem_mod.F90 ! NEC Aurora workarounds

ifsaux/parallel/cmpl_binding.F90 ! Added C-callable Fortran routine that calls Fortran MPI_Abort -- needed in some convoluted cases

ifsaux/support/dr_hook_util.F90 ! Calls to getarg & iargc changed to use standard calls get_command_argument & command_argument_count

ifsaux/support/drhook.c ! NEC Aurora port ! Do not catch SIGINT as it may interfere checkpoint/restart of IFS ! Try to produce much less output when crashing

ifsaux/support/endian.c ifsaux/support/env.c ! NEC Aurora port

ifsaux/utilities/cxxdemangle.cc ! NEC Aurora port

ifsaux/utilities/ec_meminfo.F90 ! Displays correct binding information when (Cray) MPI rank reordering was enabled ! Detects if tasks on I/O-server nodes run with less/more threads per task than on compute nodes ! Does not fail if certain files do not exist e.g. /proc/meminfo

ifsaux/utilities/ec_rank_reorder.F90 ! New EC_RANK_REORDER routine (this may never be used)

ifsaux/utilities/linuxtrbk.c ! NEC Aurora port ! Simplified call to gdb-debugger when needed

ifsaux/utilities/tabort.c ! Better handling of aborts with tracebacks

ifsobs/src/dbase/hdf_dbase_mod.F90 ! NEC Aurora port

nemo/NEMOGCM_V36/NEMO/OPA_SRC/DIA/diahth.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/DYN/-divcur.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/DYN/dynhpg.F90 nemo/NEMOGCM_V36/NEMO/OPA_-SRC/DYN/dynldf_bilap.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/DYN/dynnxt.F90 nemo/NEMOGCM_-V36/NEMO/OPA_SRC/DYN/dynspg_flt.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/DYN/dynvor.F90 nemo/NEMOGCM V36/NEMO/OPA_SRC/DYN/dynzad.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/DYN/dynzdf_imp.F90 nemo/NEMOGC V36/NEMO/OPA_SRC/LBC/lib_mpp.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/LDF/ldfslp.F90 nemo/NEMOGCM_-V36/NEMO/OPA_SRC/OBS/obs_grd_bruteforce.h90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/SOL/solpcg.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/TRA/eosbn2.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/TRA/-traadv.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/TRA/traadv_mle.F90 nemo/NEMOGCM_V36/NEMO/OPA_-SRC/TRA/traadv_tvd.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/TRA/tradmp.F90 nemo/NEMOGCM_-V36/NEMO/OPA_SRC/TRA/traldf_iso.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/ZDF/zdftke.F90 nemo/NEMOGCM_-V36/NEMO/OPA_SRC/ZDF/zdftmx.F90 nemo/NEMOGCM_V36/NEMO/OPA_SRC/lib_fortran.F90 ! Mainly Mikko Byckling's OpenMP optimization for NEMO ! Some large stack arrays now ALLOCATABLEs

odb/include/odbcs.h ! NEC Aurora port

radiation/module/radiation_cloud_generator.F90 radiation/module/radiation_config.F90 radiation/module/radiation_delta_eddington.h radiation/module/radiation_spartacus_lw.F90 radiation/module/radiation_spartacus_sw.F90 ! NEC Aurora port

satrad/module/rttov_solar_refl_mod.F90 ! Dodgy DO-loops fixed

satrad/module/rttov_unix_env.F90 ! Calls to getarg & iargc changed to use standard calls get_command_argument & command_argument_count

trans/module/leinv_mod.F90 ! single precision clean-up

trans/module/suleg_mod.F90 ! NEC Aurora workarounds

Files modified (ALGOR): `fft992.F90 minv.F90 sgtsl.F90 m1qn3.F90 m1qn3r.F90 hqr2.F90 mxva.F90 sgemmx.F sgemmx.F90 ctcab_1dv.F90 ctonb_1dv.F90 dd.F90 dd_1dv.F90 ddr.F90 dds.F90 dds_1dv.F90 ddsr.F90 ecube.F90 ecube_1dv.F90 ecuber.F90 euclid.F90 euclid_1dv.F90 m1qn3a.F m1qn3a.F90 m1qn3ar.F m1qn3ar.F90 mlis0.F90 mlis0r.F90 mupdts_1dv.F90 mupdts_orig.F90 mupdtsr.F90 ystbl_1dv.F90 ystbl_orig.F90 ystblr.F90 butterfly_alg_mod.F90 dilatation_mod.F90 interpol_decomp_mod.F90 seefmm_mix.F90`

Files modified (CMAKE): `add_symlink.cmake aeolus.cmake algor.cmake autopromote.cmake`

bl.cmake compile_flags.cmake crm.cmake dummy.cmake ecfftw.cmake enkf.cmake fieldman.cmake ifs.cmake ifsaux.cmake mpi_serial.cmake obstat.cmake odbport.cmake patch_ifs_rsp.cmake prepdata.cmake radiation.cmake satrad.cmake scat.cmake ssa.cmake surf.cmake trans.cmake wam.cmake

Files modified (CRM): cam_rad_parameterizations.F90 crm.F90

Files modified (DUMMY): efpfilter.F fpboyd.F wavemdl.F wvalloc.F wvdealloc.F wvwamdecomp.F wvwaminit.F wvwaminit1.F

Files modified (ECFFTW): tpm_fftw.F90

Files modified (ENKF): analysis_mod.F90 covar_local_mod.F90 obs_base_mod.F90 obs_constants.F90 state_geometry.F90 master_enkf.F90 oper_ens.F90

Files modified (FIELDMAN): CMakeLists.txt

Files modified (FLEXBUILD): Makefile .resize .rs 2d_decomp hres_t21 hres_tl159 ecprof_t21 ens_t21 hres_t21 hres_tl159 t21.cb tladj_t21 hres_tco1023.sk4 hres_tco1279.sk4 hres_tco255.sk4 hres_tco399.sk4 hres_tco511.sk4 hres_tco639.sk4 hres_tl159.sk4 hres_tl399.sk4 runjobs tladj_tco255.sk4 tladj_tl159.sk4 tladj_tl399.sk4 ens_t21 hres_t21 hres_tl159 tladj_t21 hres_t21 hres_tl159 gdb_hres_tl159.zamg hres_tl159.zamg tladj_tl159.zamg hres_t21.p10.lsf mkrun mkruns ntl159.p10.lsf rtco639 src.annotate.sh t21.p10.lsf tatl399.p10.lsf tatl399.p10.lsf.in tco1279.p10.lsf tco1279.p10.lsf.in tco1999.p10.lsf tco1999.p10.lsf.in tco399.p10.lsf tco639.lsf tco639.p10.lsf tco639.p10.lsf.in tco95.p10.lsf tl159.p10.lsf tocsv want2run want2run1 wrapper wrapper.interleave ens_tco1023.sum.lsf hres_t21.sum.lsf hres_tco1023.sum.lsf hres_tco1999.sum.lsf hres_tco255.sum.lsf hres_tco399.sum.lsf hres_tco3999.sum.lsf hres_tco7999.sum.lsf hres_tl159.sum.lsf jsrun.txt tladj_tco255.sum.lsf RAPS15.configs.txt RAPS16.configs.txt env.raps15 ifsnam.fc.h full_data full_data_with_accum3 full_data_with_accum6 full_data_with_accum6b full_data_with_accum3 full_data_with_accum6 OST_info hres_tco639.sgi.pbs hres_bwtco639.colfax.pbs hres_t21.colfax.pbs hres_tco399.colfax.pbs hres_tco639.colfax.pbs hres_t21.xc30fmi.pbs hres_tco639.xc30fmi.pbs oops_t21.xc30fmi.pbs oops_tco639.xc30fmi ens_tco1023.knl.pbs ens_tco1279.knl.pbs ens_tco399.knl.pbs ens_tco511.knl.pbs ens_tco639.knl.pbs hres_t21.knl.pbs hres_tco1023.knl.pbs hres_tco1279.knl.pbs hres_tco399.knl.pbs hres_tco511.knl.pbs hres_tco639.knl.pbs hres_tl159.knl.pbs hres_tl399.knl.pbs oops_t21.knl.pbs oops_tco1023.knl.pbs oops_tco1279.knl.pbs oops_tco399.knl.pbs oops_tco511.knl.pbs oops_tco639.knl.pbs oops_tl159.knl.pbs oops_tl399.knl.pbs tladj_t21.knl.pbs tladj_tco399.knl.pbs tladj_tl159.knl.pbs tladj_tl399.knl.pbs hres_tco1999.nils.pbs hres_tco3999.nils.pbs hres_tco7999.nils.pbs ens_tco1023.xc30.pbs ens_tco1279.xc30.pbs ens_tco399.xc30.pbs ens_tco511.xc30.pbs ens_tco639.xc30.pbs hres_t21.xc30.pbs hres_tco1023.xc30.pbs hres_tco1279.xc30.pbs hres_tco399.xc30.pbs hres_tco511.xc30.pbs hres_tco639.xc30.pbs hres_tl159.xc30.pbs hres_tl399.xc30.pbs oops_t21.xc30.pbs oops_tco1023.xc30.pbs oops_tco1279.xc30.pbs oops_tco399.xc30.pbs oops_tco511.xc30.pbs oops_tco639.xc30.pbs oops_tl159.xc30.pbs oops_tl399.xc30.pbs tladj_t21.xc30.pbs tladj_tco399.xc30.pbs tladj_tl159.xc30.pbs tladj_tl399.xc30.pbs ens_tco1023.xc40.pbs ens_tco1279.xc40.pbs ens_tco1999.xc40.pbs ens_tco255.xc40.pbs ens_tco399.xc40.pbs ens_tco511.xc40.pbs ens_tco639.xc40.pbs hres_t21.xc40.pbs hres_tco1023.xc40.pbs hres_tco1279.xc40.pbs hres_tco1999.xc40.pbs hres_tco255.xc40.pbs hres_tco399.xc40.pbs hres_tco511.xc40.pbs hres_tco639.xc40.pbs

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pioti.ios.od.hres_tco1279.xc40.pbs pioti.ios.rd.hres_tco399.xc40.pbs pioti.no-ios.od.
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tco255.xc40.pbs tladj_tco399.xc40.pbs tladj_tl159.xc40.pbs tladj_tl399.xc40.pbs
hres_t21.amd.slurm hres_tco255.amd.slurm hres_tl159.amd.slurm hres_tl399.amd.slurm
oops_t21.amd.slurm oops_tl159.amd.slurm oops_tl399.amd.slurm tladj_t21.amd.slurm
tladj_tl159.amd.slurm hres_bwtco639.hpclab.slurm hres_t21.hpclab.slurm hres_-
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tco255.hpcx.slurm hres_tco399.hpcx.slurm hres_tco511.hpcx.slurm hres_tco639.hpcx.slur
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oops_tco1279.hpcx.slurm oops_tco1999.hpcx.slurm oops_tco255.hpcx.slurm oops_-
tco399.hpcx.slurm oops_tco511.hpcx.slurm oops_tco639.hpcx.slurm oops_tl159.hpcx.slurm
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.ecprof_iotl399.lxg.slurm .iotl159.lxg.slurm .iotl399.lxg.slurm .tatl399.lxg.slurm.ck
ens_tco1023.lxg.slurm ens_tco1279.lxg.slurm ens_tco1999.lxg.slurm ens_tco255.lxg.slur
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hres_tco639.sky.slurm hres_tl159.sky.slurm ens_tco1023.vgr.slurm ens_tco1279.vgr.slur
ens_tco399.vgr.slurm ens_tco511.vgr.slurm ens_tco639.vgr.slurm hres_t21.vgr.slurm
hres_tco1023.vgr.slurm hres_tco1279.vgr.slurm hres_tco399.vgr.slurm hres_-
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oops_tco511.vgr.slurm oops_tco639.vgr.slurm oops_tl159.vgr.slurm oops_tl399.vgr.slurm
tladj_t21.vgr.slurm tladj_tco399.vgr.slurm tladj_tl159.vgr.slurm tladj_tl399.vgr.slur
hres_t21.vol.slurm hres_tco255.vol.slurm hres_tco399.vol.slurm hres_tl159.vol.slurm
hres_tl399.vol.slurm analysis apply_patch benchmark_summary bjobme bwinfo cdwdir
check_ht create_patch create_shared csvinfo dbg_summit deassociate diffkey
drhook_merge_walltime.pl ec_addr2line ec_drhook ecprof.pl elapsed_vs_steptime
ens expand_nodelist f90_deass filtdiff fiocsv_date2epoch.pl forecast.json.template
fort4vars gdbrun getwdir getwdir.cray gompbind hres hwstat icmcheck io_histograms
jobinfo jobinfo.full kms lst2filt mgrep model monraps mpi_rank_reorder mpi_-

rank_reorder_plain mpi_rank_reorder_swap mpif90_deass mpinfort_wrapper mpxlf90_-
r mv2rundir mv2rundir.cray nfort_wrapper nids nrj_vs_time nrjsummit objprogress
.new_lightning_diag_cy45r1_esuite_onwards dirlist full_data_eps full_data_-
eps_mod3 full_data_eps_post144 namddh namfpc ppt00000000 ppt00000100 ppt00000200
ppt00000300 ppt00000400 ppt00000500 ppt00000600 ppt00000700 ppt00000800 ppt00000900
ppt00001000 ppt00001100 ppt00001200 ppt00001300 ppt00001400 ppt00001500 ppt00001600
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ppt00130000 ppt00130600 ppt00131200 ppt00131800 ppt00140000 ppt00140600 ppt00141200
ppt00141800 ppt00150000 reduced_data_eps dirlist full_data full_data_eps full_-
data_with_accum3 full_data_with_accum6 full_data_with_accum6b namddh namfpc
ppt00000000 ppt00000100 ppt00000200 ppt00000300 ppt00000400 ppt00000500 ppt00000600
ppt00000700 ppt00000800 ppt00000900 ppt00001000 ppt00001100 ppt00001200 ppt00001300
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ppt00032100 ppt00040000 ppt00040300 ppt00040600 ppt00040900 ppt00041200 ppt00041500
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ppt00081800 ppt00090000 ppt00090600 ppt00091200 ppt00091800 ppt00100000 oops
oops papicounter.pl perf-record perf-stat pgf90_deass pgi_debug pie.pl plot_-
gstats_pie.py pphook.pl prettyfi_namelists.pl pushwdir rapsmon rapstar reprod_-
check.pbs reprod_check.pbs.bp reprod_check.pbs.noieeehalt reprod_check.pbs.nonemo
reprod_check.pbs.norad reprod_check.pbs.nowam reprod_check.slurm rs tco_ngptotg

tladj tladj_cmp tlplot topinfo untar wall_vs_timestep wam_naot_naos which.pl
wrapper_script xdiffbr Blacklist.all Blacklist.cpp black_ds2017030200 blcomp
build_bl95x external_bl_mon_monit.b mon_black2017020700.b config.cce.knl config.cce.p
config.cce.xc30 config.cce.xc40 config.cce862.xc40 config.ccegnu.xc40 config.ccemkl.k
config.ccemkl.xc40 config.cceob.xc40 config.ccestd.xc40 config.gcc6.vgr config.gcc7.a
config.gcc7.vgr config.gcc7mkl.vgr config.gcc8.amd config.gnu.arm64 config.gnu.colfax
config.gnu.knl config.gnu.linux config.gnu.linuxbox config.gnu.lxg config.gnu.lxg.cb
config.gnu.melchior config.gnu.p10 config.gnu.p8ocf config.gnu.summit config.gnu.tx1
config.gnu.volta config.gnu.wsl config.gnu.xc30fmi config.gnu.xc40 config.intel.amd
config.intel.bdw config.intel.cheyenne config.intel.colfax config.intel.hpclab
config.intel.hpcx config.intel.knl config.intel.lxg config.intel.sk4 config.intel.vgr
config.intel.xc30 config.intel.xc40 config.intelhgp.vgr config.intelmch.amd
config.intelmkl.xc30 config.intelmkl.xc40 config.intelob.lxg config.intelskx.hpclab
config.nec.zamg config.organic.arm64 config.pgi.amd config.pgi.devolta config.pgi.dev
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create_reference_outputs_raps18.xc40 ens.csv ens.table ens.txt h120.ens.txt
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lxg.slurm p8o.slurm amd.basic.txt ccab.basic.txt knl.basic.txt lxg.basic.txt
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vdfmains.F90 vdfmainsad.F90 vdfmainstl.F90 wvcouple.F90 wvxf2gb.F90 ice_effective_-
radius.F90 lwprclair.F90 lwprnuage.F90 radaca.F90 radact.F90 raddrv.F90 radflux_-
layer.F90 radiation_scheme.F90 radintg.F90 rrtm_kgb1.F90 srtm_kgb16.F90 su_-
c11clim.F90 su_c12clim.F90 su_c22clim.F90 su_ccl4clim.F90 su_ch4clim.F90 su_-
co2clim.F90 su_gch4clim.F90 su_gco2clim.F90 su_gozoclim.F90 su_mch4clim.F90
su_mcica.F90 su_mco2clim.F90 su_mozoclim.F90 su_n2oclim.F90 su_no2clim.F90
su_ozoclim.F90 suecozc.F90 suecrad.F90 swniad.F90 swnitl.F90 uvradi.F90 uvradi_-
layer.F90 ppintp.F90 ppsta.F90 master.F90 sekf_geteda_jacobians.F90 sm_ekf_-
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sugridug.F90 sugridug2.F90 suhdf_ec.F90 suinif.F90 sulega.F90 sumcclag.F90
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suorog.F90 supp.F90 sures.F90 surip.F90 susi.F90 suslad2.F90 suslb.F90 suspecg2.F90
suspsdt.F90 susta.F90 sutrans0.F90 suvert.F90 suvertfe1.F90 suvertfe3.F90 suvertfe3d.
suvv1.F90 eof_matrix.F90 legtri.F90 transinv_mdl.F90 transinv_nhconv.F90 deallo.F90
dealsc2.F90 dverint.F90 interp_gp.F90 opdis.F90 spec_fields_interp.F90 updtim.F90
verint.F90 verintad.F90 write_wavelet_initcv_grib.F90 bgvecs.F90 chavarin.F90
chavarinad.F90 getsatid.F90 jbtomodel.F90 jbtomodelad.F90 pregprh.F90 rdfpinc.F90
sujbwavallo.F90 sujbwavelet_stdevs.F90 sujbwavtrans.F90 supert.F90 surad_-
jot.F90 xformev.F90

Files modified (IFSAUX): oldbufr_close.F90 oldbufr_open.F oldbufr_open.F90 oldbufr_-
read.F90 oldbufr_rewind.F90 oldbufr_write.F90 oldcma_close.F90 oldcma_get_-
address.F90 oldcma_open.F90 oldcma_read.F90 oldcma_rewind.F90 oldcma_set_-
address.F90 oldcma_write.F90 i_system.c n_compat.F90 uv2sd.F90 ellips.F90 ellips64.F9
facgrm.F90 falais.F90 falgra.h fareor.F90 fasgra.F90 codega.F90 confi.F90 confp_-
mf.F90 decfp_mf.F90 decoga.F90 gbyte_mf.F90 gbytes_mf.F90 gsbite_mf.F90 gsbyte_-
mf.F90 mxmn_mf.F90 offset_mf.F90 packgb.F90 prtbin_mf.F90 sbyte_mf.F90 sbytes_-
mf.F90 unpagb.F unpagb.F90 bt.c abor1.intfb.h cas.h drhook.h ec_rank_reorder.intfb.h
optbadcv.F90 optd.F90 opteff.F90 opterror.F90 optgee.F90 optmccpa.F90 optremez.F90
optwate.F90 deallocate_if_associated_mod.F90 mpl_abort_mod.F90 mpl_arg_mod.F90
parkind_wave.F90 sdl_mod.F90 sha256_wrapper.F90 sharedmem_mod.F90 yomabrt.F90
cmpl_binding.F90 coml_binding.F90 run_fortran_omp_parallel.F90 transforms4py.F90
abor1.F90 cargs.c dr_hook_util.F90 dr_hook_util_multi.F90 drhook.c endian.c
env.c cxxdemangle.cc ec_meminfo.F90 ec_rank_reorder.F90 get_tcmalloc_info.c
getcurheap.c getheapstat.F90 gethwm.c getmemstat.F90 linuxtrbk.c mpi_version.c
omp_version.c reserve_hugepages.c tabort.c

Files modified (IFSIODUMMY): atlas_module.F90 eccodes.F90 fckit_log_module.F90 fckit_-
module.F90 helloworld.F90 iclosefdb.F iflushfdb.F iinitfdb.F iinitfdb_vpp.F
iopenfdb.F ireadfdb.F iset_fdb_root.F isetcommfdb.F isetfieldcountfdb.F isetrankfdb.F
isetvalfdb.F iwritefdb.F

Files modified (IFSOBS): CMakeLists.txt hdf5_file_mod.F90 ascii_dbase_mod.F90 dbase_-
mod.F90 hdf_dbase_mod.F90 ifsobs_dbase_mod.F90 netcdf_dbase_mod.F90 odb1_-
dbase_mod.F90 odb2_dbase_mod.F90 odbserver_dbase_mod.F90 dbase_view_mod.F90
dbase_view_tree_mod.F90

Files modified (MPI_SERIAL): mpi_finalized.F mpi_reduce.F mpi_type_commit.F mpi_-
type_create_indexed_block.F mpi_type_free.F mpi_waitany.F mpif.h

Files modified (NEMO): CMakeLists.txt mppallgatherv.F90 CMakeLists.txt CMakeCCompiler.cmake
CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_C.bin CMakeDetermineCompilerABI_-
CXX.bin CMakeDetermineCompilerABI_Fortran.bin CMakeFortranCompiler.cmake CMakeSystem.
CMakeCCompilerId.c a.out CMakeCXXCompilerId.cpp a.out CMakeFortranCompilerId.F
a.out CMakeCCompiler.cmake CMakeCXXCompiler.cmake CMakeDetermineCompilerABI_-
C.bin CMakeDetermineCompilerABI_CXX.bin CMakeDetermineCompilerABI_Fortran.bin
CMakeFortranCompiler.cmake CMakeSystem.cmake CMakeCCompilerId.c a.out CMakeCXXCompile

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a.out CMakeFortranCompilerId.F a.out CMakeOutput.log cmake.check_cache feature_-
tests.bin feature_tests.c feature_tests.cxx CMakeLists.txt CMakeLists.txt.user
README.txt compiler_flags.cmake compiler_flags_Clang_CXX.cmake compiler_flags_-
Cray_CXX.cmake compiler_flags_Cray_Fortran.cmake compiler_flags_GNU_CXX.cmake
compiler_flags_GNU_Fortran.cmake compiler_flags_Intel_CXX.cmake compiler_-
flags_Intel_Fortran.cmake compiler_flags_XL_CXX.cmake compiler_flags_XL_Fortran.cmake
CMakeLists.txt TestErrorCovariance.cc TestGeometry.cc TestIncrement.cc TestLinearMode
TestLocations.cc TestObsErrorCovariance.cc TestObservationSpace.cc TestObservationVec
TestVariables.cc nv3dfgat.cc ecbuildmake.ksh CMakeLists.txt AllObsCovNV.cc
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AllObsTLADnv.cc AllObsTLADnv.h AllObsTLADnv.interface.F90 CMakeLists.txt ErrorCovaria
ErrorCovariance3dNV.cc.save ErrorCovariance3dNV.h ErrorCovariance3dNV.interface.F90
FieldsNV.cc FieldsNV.h FieldsNV.interface.F90 FortranNV.h GeometryNV.cc GeometryNV.h
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IncrementNV.cc IncrementNV.h LinearModelNV.cc LinearModelNV.h LocalizationMatrixNV.cc
LocalizationMatrixNV.h LocationsNV.cc LocationsNV.h LocationsNV.interface.F90
ModelBiasCovarianceNV.h ModelBiasIncrementNV.h ModelBiasNV.h ModelNV.cc ModelNV.h
ObsBiasCovarianceNV.h ObsBiasIncrementNV.h ObsBiasNV.h ObsSpaceNV.cc ObsSpaceNV.h
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ObsVecNV.h ObsVecNV.interface.F90 RunNV.cc RunNV.h StateNV.cc StateNV.h TraitsNV.h
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.3dfgat.json.swp 3dfgat.json 3dfgat.json.save 4dsaddle.json interfaces.json
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bkg_bal.F90 bge.F90 bge_cov.F90 bge_cov_ens.F90 bge_cov_eof.F90 bge_cov_mod.F90
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bge_ran_hyb.F90 bge_ran_mod.F90 bge_ran_obs.F90 bge_variables.F90 bkg.F90 bkg_-
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phycst.F90 ens.F90 ens_ctl_def.F90 ens_def.F90 ens_dia.F90 ens_fil.F90 ens_-
inner.F90 ens_nam.F90 ens_per.F90 ens_standalone.F90 ens_ten.F90 ens_typ.F90
ens_var.F90 eof.F90 eof_ctl_def.F90 eof_def.F90 eof_nam.F90 eof_stats.F90 in_-
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tools_keys_PGI.cmake fcmcmake.ksh nemo.cfg nemo.cfg cce862.xc40 nemo.cfg nemo.cfg

nemo.cfg cceob.xc40 nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg
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nemo.cfg nemo.cfg nemo.cfg nemo.cfg intel.lxg.cb nemo.cfg nemo.cfg nemo.cfg
intel.xc30 nemo.cfg nemo.cfg nemo.cfg intelmkl.xc30 nemo.cfg intelmkl.xc40
nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg nemo.cfg
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ddatetoymdhms.h90 greg2jul.h90 jul2greg.h90 lapack.F bufrdata.F90 fbDesstat.F90
fbmergedup.F90 fbstat.F90 fbsuperobfix.F90 osisaf2fb.F90 read_osisaf.h90 coords.F90

Files modified (OBSTAT): mod_obstat_plot.F90 mod_sat_monitor.F90 obstat_def.F90 sat_-
324_hist_plot.F90

Files modified (ODB): CMakeLists.txt b2o_convert.F90 b2o_convert_aeolus.F90 b2o_-
convert_asr.F90 b2o_convert_atms.F90 b2o_convert_atovs.F90 b2o_convert_fy3.F90
b2o_convert_grad.F90 b2o_convert_msg.F90 b2o_convert_rain_gauges.F90 b2o_-
convert_rain_rates.F90 b2o_convert_satob.F90 get_varindex.F90 sufger_aeolus.sql
aeolus.h cma.h links_aeolus_hdr.sql radiance.h sat.h satbody_atovs.sql sufger_-
aeolus.sql type_definitions.h update_hdr_3.sql odb_assoc_cols.h odb_it_members.h
odbcs.h timerdefs.func.h b2o_accessor_compressed.F90 b2o_common.F90 b2o_functional.F9
b2o_thinning_heap.F90 datetimemod_aeol.F90 varindex_module.F90 fcqodb_solverif.F90
create_ioassign CMakeLists.txt DUMMY.IOASSIGN DUMMY.dd DUMMY.sch an_depar.cmap
date.cmap dir.cmap fg_depar.cmap modoro.cmap obstype.cmap oldwind.cmap press.cmap
press_hpa.cmap procid.cmap ps.cmap ps_hpa.cmap rtablel_2031 rtablel_2047 rtablel_-
2063 rtablel_2095 rtablel_21023 rtablel_21151 rtablel_2127 rtablel_21279 rtablel_-
2159 rtablel_22047 rtablel_2215 rtablel_2255 rtablel_2319 rtablel_2399 rtablel_-
2511 rtablel_2639 rtablel_2799 stalt.cmap status.cmap t.cmap t2m.cmap target.cmap
tbr.cmap tcelsius.cmap tfahrenheit.cmap time.cmap tslot.cmap wind.cmap Merge_-
gmi_swaths.F90 Odb2_to_odb1_era.F90

Files modified (OOPSIFS): CMakeLists.txt ifs4dvar.cc GeometryIFS.interface.F90 test.xml

Files modified (OOPSIFS_UNBOOSTED): ifsForecast.cc AllObs.cc AllObs.h AllObs.interface.F90
AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 ErrorCovariance3D.cc ErrorCovariance3D.h
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90
GeometryIFS.h GeometryIFS.interface.F90 GomData.cc GomData.h GomData.interface.F90
GomsIFS.h IfsFortran.h IfsTraits.h IncrementIFS.cc IncrementIFS.h LinearModelIFS.cc
LinearModelIFS.h LinearModelIFS.interface.F90 LocalizationMatrixIFS.cc LocalizationMa
LocalizationMatrixIFS.interface.F90 LocationsIFS.cc LocationsIFS.h LocationsIFS.inter
ModelBias.h ModelBiasCovariance.h ModelBiasIncrement.h ModelIFS.cc ModelIFS.h
ModelIFS.interface.F90 ModelIFS.list.F90 ObsBias.cc ObsBias.h ObsBias.interface.F90
ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.interface.F90 ObsBiasIncre
ObsBiasIncrement.h ObsBiasIncrement.interface.F90 ObsSpaceODB.cc ObsSpaceODB.h
ObsSpaceODB.interface.F90 ObsTraj.h ObsVector.cc ObsVector.h ObsVector.interface.F90
RunIFS.cc RunIFS.h RunTestIFS.cc RunTestIFS.h StateIFS.cc StateIFS.h Trajectory.list.
VariablesIFS.h VariablesIFS.interface.F90 ifs_init_wrapper.F90 instantiateObsErrorFac
linkedList.F90 linkedList.intf.F90 mpi_wrapper.F90 pm_link_mod.F90 pm_linked_-
list_mod.F90

Files modified (PREPDATA): svsp2gp.F90 eppes.F90 eppes_ini_vars.F90 eppes_version.h fielddef.F90 mcmcprec.F90 mcmcrand.F90 svgg.F90 Wavelet_Filter_IBM.F90 cinterpol.F90 genlatmu.F90 getclimo3.F90 restbl.F90 sptogp.F90 unbal_eda.F90 vod2uv.F90

Files modified (RADIATION): radiation_aerosol_optics.F90 radiation_cloud_generator.F90 radiation_config.F90 radiation_delta_eddington.h radiation_mcica_lw.F90 radiation_mcica_sw.F90 radiation_spartacus_lw.F90 radiation_spartacus_sw.F90 radiation_two_stream.F90

Files modified (SATRAD): cmem_init.F90 bufr_grid_screen_keep.F90 mod_screen_1c_bufrmsg.F90 mod_screen_1c_config.F90 mod_screen_1c_constants.F90 mwave_const.F90 rttov_solar_refl_mod.F90 rttov_unix_env.F90 mwave_get_rtcoeff.F90 mwave_obsop_rttov.F90 mwave_obsop_rttov_ad.F90 mwave_obsop_rttov_tl.F90 antenna_correct.F90 distance_between.F90 bufr_grid_screen.F90 bufr_screen_cris.F90 bufr_screen_reo3_superob.F90 bufr_screen_synop_rain_gauges.F90 old_screen_1c.F90 screen_1c.F90

Files modified (SCMEC): trans_inq.F90 trans_inq.h

Files modified (SURF): fcsvdfs.h cce-optS.cfg gnu-optS.cfg cotwo_mod.F90 cotworestress_mod.F90 flake_driver_mod.F90 flakeene_mod.F90 flakerad_mod.F90 sppcfl_mod.F90 sppcflsad_mod.F90 sppcflstl_mod.F90 sppgust_mod.F90 srfsn_vgrid_mod.F90 surftstp_ctl_mod.F90 suscst_mod.F90 susflake_mod.F90 suvexcs_mod.F90 vexcs_mod.F90 vupdz0_mod.F90 yos_flake.F90 netcdf_utils.F90 parkind1.F90 suvdfs.F90 fcvdfs.h

Files modified (TRANS): setup_trans.F90 trans_inq.F90 setup_trans.h trans_inq.h dealloc_resol_mod.F90 dist_grid_ctl_mod.F90 ftinv_ctl_mod.F90 ledir_mod.F90 leinv_mod.F90 ltinv_ctl_mod.F90 setup_geom_mod.F90 suleg_mod.F90 supolf_mod.F90 tpm_fields.F90 tpm_geometry.F90 rgrid.F90

Files modified (WAM): uras3a.F abort1.F airsea.F altas.F90 bouinpt.F bouint.F buildstress.F cal_second_order_spec.F check.F checkcfl.F chief.F cimsstrn.F cireduce.F class_wgrib.F closend.F combinepeaks.F cpfdb.F ctuw.F current2wam.F decode_point_spectra.F difdate.F ersfile.F file_transfer.F fillgaps.F fld2wam.F fndprt.F fwsea.F gapinterpol.F getcurr.F getspec.F getstress.F getwnd.F getwspec.F grdata.F grfield.F90 grib2wgrid.F grstname.F gsfile_new.F halfspread.F headbc.F ifstowam.F implsch.F incdate.F inisnonlin.F init_fieldg.F init_sdiss_ardh.F90 init_x0tauhf.F initialint.F initmdl.F initnemocpl.F intpol.F intspec.F intwaminput.F inwgrib.F kerkei.F kurtosis.F lasttwobins.F lowenergy.F makeframes.F makegrid.F mblock.F mbounc.F mbounf.F mboxb.F mcout.F meansqs.F mgrid.F mpabort.F mpbcastgrid.F mpbcastintfld.F mpbcastsarin.F mpdecomp.F mpgatherbc.F mpgatherersfile.F mpgathergrdf mpgatherspp.F mpuserin.F mstart.F mswell.F90 mubuf.F newwind.F nlweigt.F notim.F oifield.F optint.F out_onegrdpt.F outbc.F outbs.F outcom.F outers.F outgrid.F outint.F outnam.F outspp.F outwnorm.F outwspec.F partitioning.F preproc.F preset.F preset_wgrib_template.F prewind.F propag_wam.F propags.F propags1.F propags2.F propdot.F readbou.F readcur.F readfl.F readpre.F readsarspec.F readsat.F readsta.F readstress.F readwgrib.F readwind.F rearrngsar.F recvnemofields.F resize_gap_array.F resize_getwspec.F rfl4wam.F90 runwam.F saras.F savrest.F savspec.F savstress.F sdissip.F90 secondhh.F secondhh_gen.F sep3tr.F sepwisw.F setmarstype.F sinput.F90 sinput_ard.F90 sinput_jan.F spectra.F stokesdrift.F stresso.F swellsep.F tabu_swellft.F tauhf.F threshhold.F timin.F topoar.F tustreas.F uibou.F uiprep.F

unblkrord.F unsetice.F update.F updatewd.F userin.F wam2odb.F90 wam_syminv.F
wam_time_routines.F90 wamassi.F wamodel.F wamoi.F wavemdl.F wdfluxes.F wdirspread.F
wgrib2fdb.F wgribencode.F wgribenout.F wgribout.F windsea.F wposnam.F write_-
currents.F write_mpdecomp.F writefl.F writestress.F wvwamdecomp.F wvwaminit.F
_pe2set.intfb.h _set2pe.intfb.h abort1.intfb.h adjust.intfb.h airsea.intfb.h
aki.intfb.h aki_ice.intfb.h altas.intfb.h avoidpeaks.intfb.h betadef.intfb.h
bouinpt.intfb.h buildstress.intfb.h cal_second_order_spec.intfb.h check.intfb.h
checkcfl.intfb.h chesig.intfb.h cigetdeac.intfb.h cimsstrn.intfb.h cireduce.intfb.h
ciwabr.intfb.h ciwaf.intfb.h class_wgrib.intfb.h clean_outbs.intfb.h closend.intfb.h
combinepeaks.intfb.h command.intfb.h confile.intfb.h crossas.intfb.h crossw.intfb.h
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dotdc.intfb.h ersfile.intfb.h expand_string.intfb.h fdur.intfb.h femean.intfb.h
femeanws.intfb.h file_transfer.intfb.h fillgaps.intfb.h findb.intfb.h fkmean.intfb.h
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fwsea.intfb.h gapinterpol.intfb.h getcurr.intfb.h getspec.intfb.h getstress.intfb.h
getwnd.intfb.h getwspec.intfb.h gradi.intfb.h grdata.intfb.h grfield.intfb.h
grib2wgrid.intfb.h grstname.intfb.h gsfile_new.intfb.h h_max.intfb.h halfspread.intfb
headbc.intfb.h ifstowam.intfb.h implsch.intfb.h incdate.intfb.h inisnonlin.intfb.h
init_fieldg.intfb.h init_sdiss_ardh.intfb.h init_x0tauhf.intfb.h initialint.intfb.h
initmdl.intfb.h initnemocpl.intfb.h iniwcst.intfb.h intpol.intfb.h intspec.intfb.h
inwgrib.intfb.h jafu.intfb.h jonswap.intfb.h kerkei.intfb.h kgribsize.intfb.h
kurtosis.intfb.h kzeone.intfb.h lasttwobins.intfb.h llalloc_grdfld.intfb.h
loc2glo.intfb.h lowenergy.intfb.h makeframes.intfb.h makegrid.intfb.h mblock.intfb.h
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mnintw.intfb.h mpabort.intfb.h mpbcastgrdfld.intfb.h mpbcastgrid.intfb.h mpbcastintfl
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mpdecomp.intfb.h mpdistribfl.intfb.h mpdistribscfld.intfb.h mpexchng.intfb.h
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mpmdl4alt.intfb.h mppewithindist.intfb.h mpuserin.intfb.h mstart.intfb.h mswell.intfb
mtabs.intfb.h mubuf.intfb.h mwp1.intfb.h mwp2.intfb.h newwind.intfb.h nlweigt.intfb.h
notim.intfb.h oifield.intfb.h onestepapart.intfb.h optint.intfb.h out_onegrdpt.intfb.
out_onegrdpt_sp.intfb.h outbc.intfb.h outbeta.intfb.h outbs.intfb.h outcom.intfb.h
outers.intfb.h outgrid.intfb.h outint.intfb.h outnam.intfb.h outpp.intfb.h
outspp.intfb.h outunwamfield.intfb.h outunwamtest.intfb.h outwnorm.intfb.h
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wgrib_template.intfb.h prewind.intfb.h propag_wam.intfb.h propags.intfb.h propags1.in
propags2.intfb.h propdot.intfb.h prspp.intfb.h prspps.intfb.h readbou.intfb.h
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recvnemofields.intfb.h resize_gap_array.intfb.h resize_getwspec.intfb.h resize_-
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second_order_lib.intfb.h secondhh.intfb.h secondhh_gen.intfb.h secspom.intfb.h
semean.intfb.h sep3tr.intfb.h sepwisw.intfb.h set_wflags.intfb.h setice.intfb.h

setmarstype.intfb.h setwmask.intfb.h sinput.intfb.h sinput_ard.intfb.h sinput_-
jan.intfb.h skewness.intfb.h smoothsarspec.intfb.h snonlin.intfb.h spectra.intfb.h
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timin.intfb.h topoar.intfb.h transf.intfb.h transf2.intfb.h transmeans.intfb.h
transpart.intfb.h tustreas.intfb.h uibou.intfb.h uiprep.intfb.h unblkrord.intfb.h
unsetice.intfb.h update.intfb.h updatewd.intfb.h updnemofields.intfb.h updnemostress.
upwspec.intfb.h userin.intfb.h vmin.intfb.h vmin_d.intfb.h vplus.intfb.h vplus_-
d.intfb.h wam2odb.intfb.h wam_syminv.intfb.h wam_time_routines.intfb.h wam_-
u2l1cr.intfb.h wam_user_clock.intfb.h wamadszidl.intfb.h wamassi.intfb.h wamcur.intfb
wamendnemoio.intfb.h wamininemoio.intfb.h wamnorm.intfb.h wamodel.intfb.h wamoi.intfb
wamwnd.intfb.h wavemdl.intfb.h wdfluxes.intfb.h wdirspread.intfb.h weflux.intfb.h
wgrib2fdb.intfb.h wgribencode.intfb.h wgribenout.intfb.h wgribout.intfb.h windsea.int
wnfluxes.intfb.h wposnam.intfb.h writefl.intfb.h writestress.intfb.h writsta.intfb.h
wrong_wnfluxes.intfb.h wsigstar.intfb.h wsmfen.intfb.h wstream_strg.intfb.h
wvalloc.intfb.h wvdealloc.intfb.h wvfricvelo.intfb.h wvwamdecomp.intfb.h wvwaminit.in
wvwaminit1.intfb.h z0wave.intfb.h parkind_wave.F90 unstruct_wind.F90 yowdatapool.F90
yowexchangeModule.F90 yownemop.F yowsarinv.F yowunpool.F

Tomas Wilhelmsson, Cristina Lupu - nat_CY45R2_for_46R1_v8_satsim_fix - BIT IDENTICAL

Revive simulated satellite images in 46R1 (IFS-625)

Simulated satellite images is broken in CY46 and also need and FDB5 schema update for stream=elda

Files modified (AEOLUS): arpifs_excluded_files aeolus_l2bp_odb_transfers.F90 aeolus_-
l2bp_primary_ec.F90

Files modified (ALGOR): minv.F90 minv_8.F90 minv_caller.F90 m1qn3.F90 minv.h minv_-
8.h minv_caller.h sgemmx.F90 m1qn3a.F90 butterfly_alg_mod.F90

Files modified (ATLAS_APPS): CMakeLists.txt CMakeLists.txt advection_MPDATA_MPDATA_-
module.F90 advection_MPDATA_auxiliary_module.F90 advection_MPDATA_geometry_-
module.F90 advection_MPDATA_limiter_module.F90 advection_MPDATA_mappings_-
module.F90 advection_MPDATA_nabla_module.F90 advection_MPDATA_topology_module.F90
dwarf_mpdata_module.F90 CMakeLists.txt advection_SL_mesh.F90 compute_dp.F90
compute_dp_iter.F90 compute_dp_noniter.F90 compute_stencil.F90 compute_vert_-
weights.F90 compute_weights.F90 dp_cart2latlon.F90 dp_rotmat_trans.F90 dwarf_-
sladv_aux_module.F90 dwarf_sladv_kind_module.F90 dwarf_sladv_module.F90 extrap_-
wind.F90 intcubic.F90 interpolate.F90 intlin.F90 intqcubic.F90 set_halos.F90
set_halos_fld.F90 CMakeLists.txt dwarf_module.F90

Files modified (BL): dynamic_symbols.c mf_blacklist.b

Files modified (CMAKE): algor.cmake bl.cmake compile_flags.cmake dummy.cmake enkf.cmake
fieldman.cmake ifs.cmake ifsaux.cmake intfb.cmake odbport.cmake oopsifs.cmake
prepdata.cmake satrad.cmake ssa.cmake target_ignore_missing_symbols.cmake trans.cmake
wam.cmake

Files modified (DUMMY): aro_adjust_lima.F aro_ground_diag_2isba.F aro_lima.F aro_-
suintbudget_omp.F aroini_micro_lima.F canari_sfx.F ecvargpad.F ecvargptl.F
ediagb_psot.F efpfilter.F einflation_mean.F esetup_pll_recf.F fpboyd.F gp_-
horiz_flt.F suefpbip.F sueinfce.F

Files modified (ECFFTW): tpm_fftw.F90

Files modified (ENKF): obs_base_mod.F90 obs_constants.F90

Files modified (FIELDMAN): FieldSet.hpp

Files modified (IFS): call_sl.F90 call_sl_ad.F90 call_sl_heap2.F90 call_sl_tl.F90
cp_forcing.F90 cpedia.F90 cpeuldyn.F90 cpeuldyntl.F90 cpg.F90 cpg5.F90 cpg5_-
gp.F90 cpg_dia.F90 cpg_drv.F90 cpg_drv_ad.F90 cpg_drv_tl.F90 cpg_dyn.F90 cpg_-
dyn_ad.F90 cpg_dyn_tl.F90 cpg_end.F90 cpg_gp.F90 cpg_gp_ad.F90 cpg_gp_hyd.F90
cpg_gp_nhee.F90 cpg_gp_nhqe.F90 cpg_gp_tl.F90 cpg_pt.F90 cpgad.F90 cpglag.F90
cpgtl.F90 cpmvvps.F90 cpqtuv.F90 cptend_new.F90 cputqy.F90 fv_gradient.F90
gnh_conv_nhvar.F90 gnh_conv_prhs.F90 gnh_tndlagadiab_gw.F90 gnh_tndlagadiab_-
spd.F90 gnh_tndlagadiab_svd.F90 gnh_tndlagadiab_uvs.F90 gnhd3.F90 gnhdlr.F90
gnhdlra.F90 gnhdlra_sta.F90 gnhdlrb.F90 gnhee_grp.F90 gnhgrdlr.F90 gnhgrgw.F90
gnhgrpre.F90 gnhgw2svd.F90 gnhgw2svdarome.F90 gnhpre.F90 gnhpreh.F90 gnhqe_-
conv_nhvar.F90 gnhqe_conv_tempe.F90 gnhqe_grp.F90 gnhqe_nhx.F90 gnhqe_preh.F90
gnhqe_tndlagadiab_gw.F90 gnhqe_tndlagadiab_svd.F90 gnhqe_xxd.F90 gnhsvd2gw.F90
gnhx.F90 gp_derivatives.F90 gp_kappa.F90 gp_kappat.F90 gp_kappatad.F90 gp_-
kappattl.F90 gp_tndlagadiab_uv.F90 gpcty.F90 gpcty_forc.F90 gpctyad.F90 gpctytl.F90
gpgeo.F90 gpgrgeo.F90 gpgrp.F90 gpgrpad.F90 gpgrptl.F90 gpgrxyb.F90 gpgw.F90
gphpre.F90 gpinislb.F90 gpmktend.F90 gpprs0d.F90 gppvo.F90 gppwcvfe.F90 gprcp.F90
gprcph.F90 gpskap.F90 gpstress.F90 gptf1pc.F90 gptf2pc.F90 gpvcmus.F90 gpvcrs.F90
gpvcts.F90 gpvcw.F90 gpxx.F90 lacdyn.F90 lacdynad.F90 lacdynshw.F90 lacdynshwad.F90
lacdynshwtl.F90 lacdyntl.F90 ladad.F90 ladine.F90 ladinead.F90 ladinetl.F90
laitre_gfl_ad.F90 laitre_gmv.F90 lanhqesi.F90 lanhsi.F90 lanhsib.F90 lapinea.F90
lapinea5.F90 lapineaad.F90 lapineatl.F90 lapineb.F90 lapinebad.F90 lapinebtl.F90
larche.F90 larche5.F90 larche_incr.F90 larche_incr_ad.F90 larche_incr_tl.F90
larchead.F90 larchetl.F90 larcin2.F90 larcin2ad.F90 larcin2tl.F90 larcina.F90
larcinaad.F90 larcinatl.F90 larcinb.F90 larcinbad.F90 larcinha.F90 larcinhb.F90
larmes.F90 larmes5.F90 larmes_rk.F90 larmes_rk5.F90 larmes_rk_ad.F90 larmes_-
rk_tl.F90 larmesad.F90 larmestl.F90 lassie.F90 lassietl.F90 latte_bbc.F90 latte_-
kappa.F90 latte_kappaad.F90 latte_kappatl.F90 lattes.F90 lattesad.F90 lattestl.F90
lattex.F90 lavabo.F90 lavabotl.F90 lavent.F90 laventad.F90 laventtl.F90 postphy.F90
si_cccor.F90 sidd.F90 sigam.F90 silkap.F90 silkapi.F90 sinhqe_seve.F90 sinhqe_-
vderi.F90 siptp.F90 siqq.F90 siseve.F90 siskap.F90 siskapi.F90 sitnu.F90 spchor.F90
spcsi.F90 spnh_conv_nhvar.F90 spnh_conv_prhs.F90 spnhqesi.F90 spnhqesi_prodskap.F90
spnhsi.F90 tropo_tep.F90 aro_adjust.h aro_ground_diag.h aro_ground_diag_2isba.h
aro_lima.h aro_rain_ice.h aroini_micro.h aroini_micro_lima.h aroini_nsv.h deello.intf
eapply_pll_recf.intfb.h ebicli.intfb.h ebipos.intfb.h ecoupl1.intfb.h ecoupl1ad.intfb
ecoupl2.intfb.h ecoupl2ad.intfb.h ecvargpad.intfb.h ecvargptl.intfb.h ediagb_-
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elsac.intfb.h elsin0ta.intfb.h elswa3.intfb.h ereadsigmab.intfb.h ereadstd.intfb.h

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esetup_pll_recf.intfb.h eslextpol.intfb.h espcm.intfb.h espfp.intfb.h espnhqesi.intfb
espnhqesi_prodskap.intfb.h etenc.intfb.h etransdir_nhconvprhs.intfb.h etransinv_-
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evarjkini.intfb.h ewrlsgrad.intfb.h fp2sx1.h fp2sx2.h fpboyd.intfb.h fpezo2h.intfb.h
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rdclimosfx.h readjbbal.intfb.h readjbbal_nc.intfb.h readjbdat96.intfb.h readjbdat96_-
nc.intfb.h suafn1sfx.h suafn2sfx.h suafn3sfx.h suedim.intfb.h suefpbip.intfb.h
suefpg3.intfb.h suegem_naml.intfb.h suehow1.intfb.h suehow2.intfb.h suehowlsm.intfb.h
sueinfce.intfb.h sueinif.intfb.h suejbtest.intfb.h suescal.intfb.h suescal_-
jb.intfb.h suescal_norms.intfb.h sufpcsfx.h sufpezo.intfb.h wrsfx.h cseaice.F90
incli0.F90 incli1.F90 incli10.F90 incli2.F90 incli3.F90 incli4.F90 incli5.F90
incli8.F90 incli9.F90 relnew.F90 simrel.F90 cabane.F90 caclsi.F90 caclsst.F90
caeincw.F90 cagade.F90 caisse.F90 calico.F90 calina.F90 can1.F90 canami.F90
canari.F90 caohis.F90 capotx.F90 caprsurf.F90 carcli.F90 casmswi.F90 bascoe_-
chem_ini.F90 bascoe_hetconst.F90 bascoe_kpp_Rates.F90 bascoe_wetdep.F90 bascoe_-
zenith_fct.F90 bascoetm5_chem_ini.F90 bascoetm5_noymass.F90 chem_bascoe.F90
chem_bascoetm5.F90 chem_init.F90 chem_main.F90 chem_massdia.F90 chem_mocage.F90
chem_n2o.F90 chem_noyadv.F90 chem_scav.F90 chem_tm5.F90 compo_diurnal.F90 mocage_-
chem_ini.F90 mocage_krat_racmobus.F90 tm5_calrates.F90 tm5_chem_ini.F90 tm5_-
do_ebi.F90 tm5_do_ebi_tc02b.F90 tm5_kpp_Fun.F90 tm5_kpp_Jacobian.F90 tm5_-
kpp_LinearAlgebra.F90 tm5_kpp_Rates.F90 tm5_kpp_initialize.F90 tm5_kpp_update_-
cifs_conc.F90 tm5_photo_flux.F90 tm5_photorates_tropo.F90 tm5_rbud.F90 tm5_-
v0_kpp_update_cifs_conc.F90 tm5_wetchem.F90 tm5_wetchem_point.F90 updcoch.F90
cormass2.F90 cormassdry.F90 updcli.F90 updcli_mse.F90 updclie.F90 updclie_-
co2.F90 updclie_compo.F90 updcpl.F90 updnemoocean.F90 updnud.F90 updrgas.F90
ctxgetdb.F90 ctxinitdb.F90 ctxputdb.F90 distribtype_ssmi_rain.F90 distribute_-
odb.F90 getdb.F90 init_odbtools.F90 initmdb.F90 matchupdb.F90 obs_sort_odb.F90
opendb.F90 revmatchupdb.F90 shuffle_odb.F90 store_enda.F90 update_ddr_odb.F90
update_desc.F90 update_obsdb.F90 xchangedatadistdb.F90 yomdb_defs.h yomdb_-
defs_undef.h yomdb_vars.h adjotest.F90 allfpos.F90 cdsta.F90 cfcsens2obs.F90
cgr1.F90 cnt0.F90 cnt1.F90 cnt2.F90 cnt3.F90 cnt3_femars.F90 cnt3_glo.F90 cnt3_-
lam.F90 cnt3_wait.F90 cnt3ad.F90 cnt3tl.F90 cnt4.F90 cnt4ad.F90 cnt4tl.F90
cpicgfl.F90 cprep1.F90 cprep3.F90 csekf1.F90 csekf2.F90 csta.F90 ctl1.F90 cva1.F90
cva2.F90 forecast_error.F90 fpwrncf.F90 get_clinc.F90 gmassdiag.F90 gp_model.F90
gp_model_ad.F90 gp_model_heap.F90 gp_model_heap2.F90 gp_model_stack.F90 gp_-
model_tl.F90 iopack.F90 jmgfixer.F90 monfpos.F90 negfixer.F90 qmfixer.F90 qmfixer2.F9
reresf.F90 restart_cnt3.F90 scan2m.F90 scan2mad.F90 scan2mtl.F90 sim4d.F90
spcm.F90 stepo.F90 stepoad.F90 stepotl.F90 tesadj.F90 testli.F90 testlievol.F90
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cumastrn.F90 cumastrn2.F90 cumastrn2ad.F90 cumastrn2tl.F90 cupdra.F90 cupdraad.F90
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wsl.F90 diag_clouds.F90 ec_phys.F90 ec_phys_ad.F90 ec_phys_drv.F90 ec_phys_-
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layer.F90 suvdf.F90 suwcou.F90 turbulence_layer.F90 turbulence_s_layer.F90
updtier.F90 vdfdifh.F90 vdfeis.F90 vdfexcu.F90 vdfhghtn.F90 vdfmain.F90 vdfouter.F90
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su1yom.F90 su_grib_api.F90 su_surf_flds.F90 suafn.F90 suafn1.F90 suafn2.F90
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suheg.F90 suiauinif.F90 suinif.F90 suinimoderr.F90 suinterpolator.F90 sulega.F90
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mf.F90 grtest.F90 inflation_pert.F90 jb_wav_var.F90 jbtoacv.F90 jbtomodel.F90
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readvec.F90 savmini.F90 savmini2.F90 setjbhybacv.F90 setqccma.F90 setran.F90
sqrtb.F90 sqrtbad.F90 sqrtbin.F90 sqrtbinad.F90 suacv.F90 sualctv.F90 sualges.F90
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wrchres.F90 writelct.F90 writeoba.F90 writesd.F90 xformev.F90

Files modified (IFSAUX): comcha.h comdat.h comddh.h ctlarch.F ctldompf.F ctldomts.F ctlzon.F decops2.F description_table.dat getarea.F getcom1.F getcom2.F getdom.F getrec.F getreci.F getzon.F incdat.F invjul.F julday.F namus.h offset.F opone.F param.h rearec.F suarch.F sucom.F sucom2.F swapts.F i_system.c facgrm.F90 fadgra.F90 fagote.F90 faieno.h falgra.h faquin.F90 grib_get_api_version.c bt.c cas.h drhook.h ec_mpi_finalize.intfb.h ec_rank_reorder.intfb.h isrchfltpv.body.h lfi_altm.c lfi_grok.c deallocate_if_allocated_mod.F90 fa_mod.F90 fdbsubs_mod.F90 mpl_-abort_mod.F90 mpl_allgatherv_mod.F90 mpl_arg_mod.F90 mpl_comm_split_mod.F90 mpl_end_mod.F90 mpl_gatherv_mod.F90 oml_mod.F90 rttov_const.F90 rttov_ec_-mod.F90 sdl_mod.F90 sharedmem_mod.F90 yomlun_ifsaux.F90 cmpl_binding.F90 ddhrun.F faconvgrib.F90 splitps.F abor1.F90 dr_hook_util.F90 dr_hook_util_multi.F90 drhook.c endian.c env.c ifssig.c cxxdemangle.cc ec_meminfo.F90 ec_rank_reorder.F90 linuxtrbk.c tabort.c

Files modified (IFSOBS): CMakeLists.txt History.txt VERSION.cmake config.sh README.md cat_dbase.md dbase_view_mod.md generate_docs.sh match_dbase.md CMakeLists.txt CMakeLists.txt hdf5_file_mod.F90 ll_mod.F90 netcdf_file_mod.F90 quicksort_-mod.F90 dbase_factory_mod.F90 hdf_dbase_mod.F90 odb1_dbase_mod.F90 odb2_dbase_-mod.F90 odbserver_dbase_mod.F90 dbase_kinds_mod.F90 dbase_view_mod.F90 CMakeLists.txt map_dbase_mod.F90 mapping_aux_funcs.F90 mapping_parser_mod.F90 mappings_mod.F90 match_dbase_mod.F90 partition_dbase_mod.F90 CMakeLists.txt cat_dbase.F90 match_-dbase.F90 CMakeLists.txt nc_sample_map_dbase.cdl test_map_dbase_bufr_mapping.dat test_map_dbase_mapping.dat test_convert_dbase_odb1.sh test_cope_repartitioning.F90 test_dbase_performance.F90 test_dbase_view.F90 test_join_views.F90 test_ll.F90 test_match_dbase.sh test_overhead_odb2.F90 test_parallel_distribute.F90 test_-quicksort.F90

Files modified (NEMO): CMakeLists.txt bal_vel.F90 diahth.F90 divcur.F90 dynhpg.F90 dynldf_bilap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 lib_mpp.F90 ldfslp.F90 obs_grd_bruteforce.h90 obs_types.F90 obssla_types.h90 solpcg.F90 eosbn2.F90 traadv.F90 traadv_tvd.F90 tradmp.F90 traldf_iso.F90 zdfddm.F90 zdfmxl.F90 zdftke.F90 zdftmx.F90 lib_fortran.F90 arch-IBM_EKMAN_INGV.fcm CMakeLists.t namelist_cfg CFCs_CDIAC.dat CFCs_CMIP6.dat cfc1112.atm iodef.xml namelist_-age_cfg namelist_age_ref namelist_cfg cpp_ORCA2_LIM_CFC_C14b.fcm field_def.xml namelist_cfc_ref namelist_ref makenemo modlinktomodel.F90 modutil.F90 limwri.F90 agrif_opa_interp.F90 agrif_user.F90 domrea.F90 asminc.F90 bdydta.F90 diaar5.F90 diacfl.F90 diadct.F90 diahth.F90 diaprod.F90 diawri.F90 dommsk.F90 domzgr.F90 divcur.F90 dynhpg.F90 dynldf_bilap.F90 dynldf_lap.F90 dynnxt.F90 dynspg_flt.F90 dynvor.F90 dynzad.F90 dynzdf_imp.F90 icbtrj.F90 iom.F90 cla.F90 lbclnk.F90 lib_mpp.F90 ldfslp.F90 diaobs.F90 obs_conv.F90 obs_conv_constants_eos.h90 obs_-conv_functions_eos.h90 obs_grd_bruteforce.h90 obs_oper.F90 obs_types.F90 obs_-write.F90 obssla_types.h90 sbc_oce.F90 sbcblk.F90 sbcblk_algo_coare.F90 sbcblk_-algo_coare3p5.F90 sbcblk_algo_ecmwf.F90 sbcblk_algo_ncar.F90 sbcblk_clio.F90 sbcblk_core.F90 sbcblk_mfs.F90 sbccpl.F90 sbcflx.F90 sbcice_lim.F90 sbcice_-lim_2.F90 sbcisf.F90 sbcmod.F90 sbcrnf.F90 sbcsglcpl.F90 sbcssr.F90 solpcg.F90 eosbn2.F90 traadv.F90 traadv_eiv.F90 traadv_mle.F90 traadv_tvd.F90 trabbl.F90 tradmp.F90 traldf.F90 traldf_iso.F90 tranxt.F90 trazdf.F90 trd_oce.F90 trdken.F90 trdtra.F90 zdfddm_substitute.h90 zdfric.F90 zdftke.F90 zdftmx.F90 lib_fortran.F90 nemogcm.F90 step.F90 timing.F90 trc_oce.F90 daymod.F90 nemogcm.F90 par_age.F90

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sections.f90 README dimension.cfg dummy.cfg variable.cfg attribute.f90 create_-
bathy.f90 create_coord.f90 create_restart.f90 dimension.f90 2_quickstart.md
5_changeLog.md 6_perio.md global.f90 grid.f90 iom.f90 iom_cdf.f90 merge_bathy.f90
mpp.f90 phycst.f90 variable.f90 vgrid.f90 merge_bathy.nam INSTALL.rst LICENSE
README-setup-configs README.rst arch-gfortran_athena_xios.fcm arch-ifort_-
athena.fcm arch-ifort_athena_debug.fcm arch-ifort_athena_tools.fcm arch-ifort_-
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VARGAS.fcm arch-PW6_VARGAS.fcm arch-SX8_BRODIE.fcm arch-SX8_MERCURE.fcm arch-SX9_-
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NAUTILUS.fcm arch-XT6_HECTORcrayftn.fcm arch-pgf90_mobius.fcm arch-PW6_METO.fcm
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1_namelist_cfg 1_namelist_ice_cfg 1_namelist_ice_ref 1_namelist_ref 2_context_-
nemo.xml 2_namelist_cfg 2_namelist_ice_cfg 2_namelist_ice_ref 2_namelist_-
ref 3_context_nemo.xml 3_namelist_cfg 3_namelist_ice_cfg 3_namelist_ice_ref
3_namelist_ref AGRIF_FixedGrids.in AGRIF_FixedGrids_1ghost.in context_nemo.xml
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ref_impl.hpp type_util.hpp utils.hpp uuid.cpp uuid.hpp xios_spl.hpp xml_parser.cpp
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msg.F90 b2o_convert_mwri_1d.F90 b2o_convert_oscat.F90 b2o_convert_pilot.F90
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select.sql sat_atovs_hyper.sql scat_ambig_select.sql allsky.h black_robody_-
4.sql decis_robhdr_2.sql pre_thinn_robhdr_2.sql robhdr.sql robhdr_rad.sql sat.h
sat_atovs.sql sat_atovs_hyper.sql sat_ssmi.sql scat_ambig_select.sql scatt.h
b2o_debug.h cmaio.h odb_assoc_cols.h odb_it_members.h odbcs.h calc_azim.h codb.c
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mod.F90 bator_ecritures_mod.F90 bator_impr_mod.F90 bator_init_mod.F90 bator_-
lectures_mod.F90 bator_module.F90 bator_rad_postproc_mod.F90 bator_saisies_-
mod.F90 bator_util_mod.F90 bator_namelist.nam.h ecma2ecmascr Bator.F90 Convert_-
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AllObsCovariance.cc AllObsCovariance.h AllObsCovariance.interface.F90 AllObsTLAD.cc
AllObsTLAD.h AllObsTLAD.interface.F90 CMakeLists.txt ErrorCovariance3D.cc ErrorCovari
ErrorCovariance3D.interface.F90 FieldsIFS.cc FieldsIFS.h FieldsIFS.interface.F90
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GomData.interface.F90 GomsIFS.h IfsFortran.h IfsTraits.h IncrEnsCtlVecIFS.cc
IncrEnsCtlVecIFS.h IncrModCtlVecIFS.cc IncrModCtlVecIFS.h IncrModCtlVecIFS.interface.
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ObsBias.interface.F90 ObsBiasCovariance.cc ObsBiasCovariance.h ObsBiasCovariance.inte
ObsBiasCovarianceTOVSCV.cc ObsBiasCovarianceTOVSCV.h ObsBiasCovarianceTOVSCV.interfac
ObsBiasCovarianceVARBC.cc ObsBiasCovarianceVARBC.h ObsBiasCovarianceVARBC.interface.F
ObsBiasCtlVecTOVSCV.cc ObsBiasCtlVecTOVSCV.h ObsBiasCtlVecTOVSCV.interface.F90
ObsBiasCtlVecVARBC.cc ObsBiasCtlVecVARBC.h ObsBiasCtlVecVARBC.interface.F90
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routine.F90 fillgaussgrib.F90 unbal_eda.F90 wavelet_add_mod_hcor.F90

Files modified (RADIATION): easy_netcdf.F90 radiation_adding_ica_lw.F90 radiation_-
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radiation_cloud.F90 radiation_cloud_generator.F90 radiation_cloud_optics.F90
radiation_cloud_optics_data.F90 radiation_config.F90 radiation_delta_eddington.h
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ad.F90 rttov_hydro_tl.F90 rttov_iniedd.F90 rttov_iniedd_ad.F90 rttov_iniedd_-
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pccomp_inc.F90 rttov_make_profile_inc.F90 rttov_make_radiance_inc.F90 rttov_-
scale_cld_profile_inc.F90 rttov_scale_opt_param_inc.F90 rttov_scale_pccomp_-
inc.F90 rttov_scale_profile_inc.F90 rttov_scale_radiance_inc.F90 rttov_taylor_-
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fscat_flag.F find_bufrindex.F fscat_read_bufr.F fscat_write_bufr.F fupdate_-
windstat.F fwind_biascorr.F fwrite_windstat.F init_fscat_bufr.F kscat_write_-
bufr.F kwrite_windstat.F oscat_read_bufr.F rdbufr.F read_speed_bias.F write_-
fscat_flag_stat.F write_oscat_flag_stat.F fscat_filter.F kscat_filter.F

Files modified (SCMEC): su0yom1c.F90

Files modified (SSA): yomssa.F90 namssa.nam.h fdb_output.F90 scan_cma_odb.F90 ssa.F90 setcomssa.F90

Files modified (SURF): surf_inq.F90 surfexcdriver.F90 surfws.F90 surf_inq.h surfexcdriver.h surfws.h osm.cfg sppcflsad_mod.F90 sppcflstl_mod.F90 srfsn_driver_mod.F90 srfsn_lwimp_mod.F90 srfsn_regrid_mod.F90 srfsn_rsn_mod.F90 srfsn_vgrid_mod.F90 srfsn_webal_mod.F90 surfexcdriver_ctl_mod.F90 surfseb_ctl_mod.F90 surfsebs_ctl_mod.F90 surfsebsad_ctl_mod.F90 surfsebstl_ctl_mod.F90 surftstp_ctl_mod.F90 surfws_ctl_mod.F90 sussoil_mod.F90 suvexc_mod.F90 vexcs_mod.F90 vlamsk_mod.F90 vsurf_mod.F90 yos_exc.F90 callpar1s.F90 cpg1s.F90 dtforc.F90 incdat.F90 netcdf_utils.F90 rdfvar.F90 rdsupr.F90 sucst.F90 suct01s.F90 sudcdf.F90 sufcdf.F90 sugdi1s.F90 sugp1s.F90 suinif1s.F90 sulun1s.F90 suphec.F90 suvdfs.F90 upddiag.F90 vdfdifh1s.F90 vdfmain1s.F90 wrtdcdf.F90 yoephy.F90 yomct01s.F90 yomgdi1s.F90 yomgf1s.F90 fcttim.h namct01s.h mpl_mod_ctl.F90

Files modified (TRANS): dealloc_resol_mod.F90 ledir_mod.F90 leinv_mod.F90 suleg_mod.F90

Files modified (WAM): getclo.F uras3a.F abort1.F abort1.F90 adjust.F adjust.F90 airsea.F airsea.F90 aki.F aki.F90 aki_ice.F aki_ice.F90 altas.F90 avoidpeaks.F avoidpeaks.F90 betadef.F betadef.F90 bouinpt.F bouinpt.F90 bouint.F bouint.F90 buildstress.F buildstress.F90 cal_second_order_spec.F cal_second_order_spec.F90 check.F check.F90 checkcfl.F checkcfl.F90 chesig.F chesig.F90 chief.F chief.F90 cigetdeac.F cigetdeac.F90 cimsstrn.F cimsstrn.F90 cireduce.F cireduce.F90 ciwabr.F ciwabr.F90 ciwaf.F ciwaf.F90 class_wgrib.F clean_outbs.F closend.F closend.F90 combinepeaks.F combinepeaks.F90 command.F confile.F confile.F90 cpfdb.F create_wam_bathymetry.F create_wam_bathymetry.F90 create_wam_bathymetry_ETOPO1.F create_wam_bathymetry_ETOPO1.F90 crossas.F crossas.F90 crossw.F crossw.F90 ctuw.F ctuw.F90 current2wam.F current2wam.F90 decode_integrated_parameter.F decode_integrated_parameter.F90 decode_point_spectra.F decode_point_spectra.F90 dev.F dev.F90 difdate.F difdate.F90 docombine.F docombine.F90 dotdc.F dotdc.F90 dummy_alt.F dummy_alt.F90 dummy_cray.F dummy_eclib.F dummy_eclib.F90 dummy_fdb.F dummy_fdb.F90 dummy_mp.F dummy_mp.F90 dummy_no_assimil.F dummy_no_assimil.F90 dummy_no_nemo.F dummy_no_nemo.F90 ersfile.F ersfile.F90 expand_string.F expand_string.F90 fdur.F fdur.F90 femean.F femean.F90 femeanws.F femeanws.F90 file_transfer.F file_transfer.F90 fillgaps.F fillgaps.F90 findb.F findb.F90 fkmean.F fkmean.F90 fld2wam.F fld2wam.F90 fldinter.F fldinter.F90 fndprt.F fndprt.F90 frcutindex.F frcutindex.F90 fustar.F fustar.F90 fwsea.F fwsea.F90 gapinterpol.F gapinterpol.F90 get_preset_wgrib_template.F90 getcurr.F getcurr.F90 getspec.F getspec.F90 getstress.F getstress.F90 getwnd.F getwnd.F90 getwspec.F getwspec.F90 gradi.F gradi.F90 grdata.F grdata.F90 grfield.F90 grib2wgrid.F grib2wgrid.F90 grstname.F grstname.F90 gsfile_new.F gsfile_new.F90 h_max.F h_max.F90 halfspread.F halfspread.F90 headbc.F headbc.F90 ifstowam.F ifstowam.F90 imphftail.F90 implsch.F implsch.F90 incdate.F incdate.F90 inisnonlin.F inisnonlin.F90 init_fieldg.F init_fieldg.F90 init_sdiss_ardh.F90 init_x0tauhf.F init_x0tauhf.F90 initialint.F initialint.F90 initmdl.F initmdl.F90 initnemocpl.F initnemocpl.F90 iniwcst.F iniwcst.F90 intpol.F intpol.F90 intspec.F intspec.F90 intwaminput.F intwaminput.F90 inwgrib.F inwgrib.F90 iwam_get_unit.F90 jafu.F jafu.F90 jonswap.F jonswap.F90 kerkei.F kerkei.F90 kgribsize.F kgribsize.F90 kurtosis.F kurtosis.F90 kzeone.F

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outunwamfield.F outunwamfield.F90 outunwamtest.F outunwamtest.F90 outwint.F90
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freq.F90 peakfri.F peakfri.F90 preproc.F preproc.F90 preset.F preset.F90 preset_-
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propag_wam.F90 propags.F propags.F90 propags1.F propags1.F90 propags2.F propags2.F90
propdot.F propdot.F90 prspp.F prspps.F readbou.F readbou.F90 readcur.F readfl.F
readfl.F90 readpre.F readpre.F90 readsarspec.F readsarspec.F90 readsat.F readsat.F90
readsta.F readsta.F90 readstress.F readstress.F90 readwgrib.F readwgrib.F90
readwind.F readwind.F90 rearrngsar.F rearrngsar.F90 recvnemofields.F recvnemofields.F
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runwam.F90 saras.F saras.F90 savrest.F savspec.F savspec.F90 savstress.F savstress.F9
sbottom.F sbottom.F90 scosfl.F scosfl.F90 sdepthlim.F90 sdissip.F90 sdissip_-
ard.F90 sdissip_jan.F sdissip_jan.F90 sdiwbk.F sdiwbk.F90 se10mean.F se10mean.F90
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secondhh.F90 secondhh_gen.F secondhh_gen.F90 secspom.F secspom.F90 semean.F
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phi_hf.F90 tauhf.F taut_z0.F taut_z0.F90 threshhold.F threshhold.F90 timin.F
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u2l1cr.F90 wam_user_clock.F wam_user_clock.F90 wamadszidl.F wamadszidl.F90
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Andrew Dawson - diad_CY46R1_eps_nemo_tech_tests - BIT IDENTICAL

The prepIFS eps_nemo technical test configurations are not correct (IFS-626)

prepifs changes only

The two eps_nemo technical test configurations set variables some variables that have moved namelists, these should be updated so that the configurations work as intended.

Stephanie Johnson - cxsj_CY45R2_for_46r1_fix1 - BIT IDENTICAL

Fix to longrange contribution (IFS-628)

Fix to longrange contributions to 46r1

Just failed a test, I will look at it on Monday.

Tomas Wilhelmsson - nat_CY45R2_for_46R1_wam_io_serv_fixes - BIT IDENTICAL

Make wam io-server work without FDB output (IFS-629)

The io-server implemntation for WAM assumed that output was always going to FDB. This branch reenables output to standard files again. Also, moved the wam io-server routines from phys_ec to io_serv.

Andrew Dawson, Kristian Mogensen - diad_CY45R2_longfc_ocean_grib - BIT IDENTICAL

Fix support for ocean GRIB parameters (IFS-632)

The long forecast in an type experiments and fc experiments should be able to output new ocean grib parameters provided in IFS-334. There are some settings/checks missing from prepIFS to properly support this in fc and an type experiments, and the model script needs to be updated for an type experiments.

prepIFS ifs-defaults branch: diad_CY46R1_longfc_ocean_grib

Andrew Dawson - diad_CY46R1_nino_fixes - BIT IDENTICAL

nino_atmos task fails in longrange experiments (IFS-633)

The nino_atmos task fails for two reasons, firstly it is missing ecCodes since this module is no longer loaded on lxc. Once that is solved, it also fails to look in the correct FDB for the required data (see MARS-760).

Andrew Dawson, Peter Dueben - diad_CY46R1_single_precision_libsci_links - BIT IDENTICAL

Automatic work-around for single precision SGEMM issues (IFS-640)

Single precision mode requires a manual work-around to link to a different version of Cray's libsci libraries than the compiler runtime will provide when using CCE 8.5. This work-around can be included in the build script since it already has the information required to know if the work-around is necessary.

Andrew Bennett, Axel Bonet - diab_CY46R1_suites_PR8_fix/map_CY46R1_map_46R1_emos - BIT IDENTICAL

Align EMOS and research suites (IFS-647)

Up until now EMOS suite definitions have been in a separate repository. This task is to merge this code with the code for research in CY46R1 so that we are aligned for future changes.

Andrew Bennett - diab_CY46R1_IFS-648_symlinks - BIT IDENTICAL

Eliminate symlinked suite tasks (IFS-648)

Implement suite design best practice by ensuring the name of the suite task reflects the name of the job script. h4. Example

For instance, 45 odb2odb1 job scripts all symlink to one script odb2odb1.sms in the repository:

```
5646817     0 lrwxrwxrwx    1 diab      rd              12 Dec 13 08:48 ./
   sms_an/odb2odb1_nexrad.sms -> odb2odb1.sms
5646808     0 lrwxrwxrwx    1 diab      rd              12 Dec 13 08:48 ./
   sms_an/odb2odb1_meris.sms -> odb2odb1.sms
5646829     0 lrwxrwxrwx    1 diab      rd              12 Dec 13 08:48 ./
   sms_an/odb2odb1_tmi.sms -> odb2odb1.sms
5646821     0 lrwxrwxrwx    1 diab      rd              12 Dec 13 08:48 ./
   sms_an/odb2odb1_saphir.sms -> odb2odb1.sms
   ... etc ...
```

These symlinks are needed to match the task names in the ecFlow suite in the odb2odb1 family:

```
family odb2odb1
  task odb2odb1_conv
  task odb2odb1_ims
  task odb2odb1_satob
  task odb2odb1_gpsro
  ... etc ...
```

Instead, we remove the symlinks, turn the tasks into families, and add a task odb2odb1 to all the families to match the one real script that is running. We would need to ensure that the TASK suite variable is set and used correctly in those families so that the script knows which observations it is processing. This would look something like the following:

```
family odb2odb1
  family conv
    edit TASK 'odb2odb1_conv'
    task odb2odb1
  family ims
    edit TASK 'odb2odb1_ims'
    task odb2odb1
  family satob
    edit TASK 'odb2odb1_satob'
    task odb2odb1
  family gpsro
    edit TASK 'odb2odb1_gpsro'
    task odb2odb1
  ... etc ...
```

Andrew Bennett, Andrew Dawson - diab_CY46R1_IFS-654_RESOL_int_fix - BIT IDENTICAL

Resolution not checked correctly in longrange (IFS-654)

A relational comparison between a string and an integer takes place in pySuite to create the longrange experiments. The assumption is that the string is converted to an integer before comparison, but this is not the case, resulting in the suite containing an incorrect suite variable.

The offending code is this:

```
    @property
    def mm_variables(self):
        ``'''Variables for monthly-mean computation tasks.'''``
        if self.resolution > 399:
            mem = 10000
        else:
            mem = 6500
        return {``MEM'': mem}
```

The variable self.resolution is actually a string. If you examine the behaviour in python 2.7 (and python 3), you see the problem:

```
>>> resol_str='319'  # this is a str
>>> resol_int=319   # this is an int
>>> resol_str > 399   # what??
True
>>> resol_int > 399  # sensible
False
```

The result is that the variable MEM is assigned the value 10000 instead of 6500.

There are two solutions:

16 convert `self.resolution` to an integer when it obtains its value (from the `RESOL` prepIFS variable);

17 change the type of the RESOL variable in prepIFS to INTEGER instead of STRING. This occurs in script `prepifs/include/setup_scripts.git` when it appends various system variables to the python config file.

This change implements option 2. It also updates the pySuite test configs in the suites repo.

The following PrepIFS variables were also checked that they were ouput by prepIFS as integers, as they use relational operators in the python:

EPSMEMBERS
EPSNENS
FCTOTDONE
FCEXTOTDONE
OCARCHGRPSZ
FCEXTOT
N_PERT_AN
NOUTMAX
SC_IFS_BUILD_MRFS_SIZE
EPSNLEGS
OCTOTAL

I found that these were all okay apart from NOUTMAX (used by opa) and EPSNLEGS (used by eps_nemo), which are output as strings in ecf_def (they are of prepIFS type SELECTNUMBER). However there are pre-existing code modifications to ensure these are cast to integers in pySuite before use.

Tomas Wilhelmsson, Axel Bonet - pag_CY46R1_ddhdiss - BIT IDENTICAL

Dissemination of additional DDH point data to FMI (IFS-658)

Ewan O'Connor (FMI) has requested that an additional DDH location be archived and disseminated (Maida, La Reunion) to FMI for inclusion in the Actris/Cloudnet project. This branch modifies the script "emos_include/ddh_arm" that extracts and disseminates DDH data to include one additional DDH point. The operational namelist has already been updated to archive the extra point.

Andrew Dawson, Stephanie Johnson - diad_CY46R1_longrange_single_precision - BIT IDENTICAL

Allow single precision forecasts in longrange experiments (IFS-659)

The longrange suite definition is missing the required IFS_PRECISION variables to allow single precision forecasts. The rest of the configuration (prepIFS/scripts) is already in place.

Andrew Bennett, Deborah Salmond, Gabor Radnoti - diab_CY46R1_IFS-664_oops_tasks_bugs - BIT IDENTICAL

OOPS 4DVAR suite tasks are incorrect (IFS-664)

From [~das]:

bq. The uptraj_3/getoopsan task has disappeared from an OOPS run I submitted today (see h42g) - it was there on a similar OOPS run I submitted on 8th Jan (see h3m9). bq. bq. Also I noticed that in the last trajectory it has lost count of uptraj- it should be 3 but seems to be only 2.

Andrew Dawson - diad_CY46R1_fix_longrange_oceanini - BIT IDENTICAL

Longrange experiment type fails when run without ice model (IFS-668)

The longrange experiment type fails in nprepicelongrange due to a missing file. The cause of this is an erroneous EPSCOUPLE=1 suite variable added to each ocean initial condition family. This variable should be removed for longrange experiment types.

Stephanie Johnson - cxsj_CY46R1_omona_dirtree_fix - BIT IDENTICAL

bug in nemo output post-processing scripts in type longrange (IFS-675)

Looks like some of the output paths in omona_arc.ecf don't have the forecast date in them, which means that when multiple reforecast dates are run at the same time, output files can be deleted by other fcdate families. Should be a longrange only issue.

Patrick Gillies - dipg_CY46R1_suinfce_failure - BIT IDENTICAL

Failure in suinfce (IFS-709)

[~dav] experienced a failure in a suinfce:

The experiment is rrda2/dav/h4cq and it fails in ifsmin during suinfce with the message:

---- Set up Jb gridpoint background error stdev ---------- BACKGROUND ERROR FILE MUST CONTAIN ' WIND OR VORTICITY ABOR1 CALLED MISSING BACKGROUND ERROR FIELDS
The errgrib file does not contain btmp but includes all the essential files so this should still work. Suspect there is a bug in the way suinfce reads in the files when a file is missing.

Files modified (ATLAS_APPS): `dwarf_mpdata_module.F90 dwarf_sladv_module.F90`

Files modified (IFS): `fv_gradient.F90 gp_derivatives.F90 compo_diurnal.F90 aer_dust.F90 mgrids_advection_module.F90 mgrids_advection_submodule.F90 mgrids_sladv_module.F90 parfpos.F90 varbc_setup.F90 varbc_to3.F90 yoeaersrc.F90 aer_phy3.F90 aer_-src.F90 climaer_layer.F90 culinox.F90 su_aer_climatology3d.F90 suecaec.F90 uvradi.F90 suafn2.F90 suorog.F90 mod_ini.F90 updtim.F90 sujbwavwri.F90`

Files modified (ODB): `b2o_amend.F90 b2o_decode.F90 get_varindex.F90 hdr.h b2o_internal.F90 varindex_module.F90`

Files modified (SATRAD): `mod_screen_1c_bufrmsg.F90 bufr_screen_reo3_superob.F90 gensatim.F90`

Files modified (WAM): `mpcrtbl.F90 wgrib2fdb.F90`

Andrew Dawson - diad_CY46R1_lepssvini_corrected - BIT IDENTICAL

eps_nemo fails when run without singular vector perturbations (IFS-717)

There is a bug in the eps_nemo suite definition that means it generates some tasks for applying singular vector initial condition perturbations even when these are turned off. These tasks will then fail to run because there are no perturbations to apply.

The problem is a typo in the parameter name in the suite definition, it references LEPSSVINIC instead of LEPSSVINI, and the places where it is referenced use self . parameters . get (`` LEPSSVINIC", True). Since the variable we look up is never present (because it is spelled incorrectly) we always retireve the value True.

There is now no need to treat this as an optional parameter, therefore the suite definition can be modified to use self . parameters [`` LEPSSVINI"] and the bug will be resolved.

Tomas Wilhelmsson, Anna Mueller-Quintino, Gabor Radnoti, John Hodkinson, Michael Sleigh - [No branch] - BIT IDENTICAL

ELDA outputs ill-formed Model Level surface pressure level=1 (IFS-723)

The ELDA component of the IFS outputs a field that is not properly formed. It is stored/indexed as levtype=ml,levelist=1,param=134, while in the GRIB header it is described as levtype=sfc,param=134.

This problem is already present in FDB4. It has only been highlighted when migrating to FDB5, because FDB5 checks the GRIB headers and indexes the data according to what it finds. This causes that the ill-formed field overwrites the genuine levtype=sfc,param=134, so the archive job finds/archives the wrong field.

Here is an example that exercises the problem. I can retrieve the ill-formed field with levtype=ml,levelist=1,param=134 from the FDB4 of the operational ELDA, but what I find actually in the GRIB header is levtype=sfc,param=134 (which is not the correct levtype=sfc,param=134). {noformat} RETRIEVE, CLASS = OD, TYPE = FC, STREAM = ELDA, EXPVER = 0001, REPRES = SH, LEVTYPE = ML, LEVELIST = 1, PARAM = 134, DATE = 20190218, TIME = 1800, STEP = 1, ANOFFSET = 3, NUMBER = 14, DOMAIN = G, TARGET = “initial_surface_sp” mars - INFO - 20190219.100505 - Requesting 1 field 736 FDB; INFO; DB$_ Fields DataBase 4.9.0 mars - INFO - 20190219.100505 - 1 field retrieved from ’cca fdb’ mars - INFO - 20190219.100505 - Transfer from ccafdb: 803.40 Kbyte(s) in < 1 sec [5.30 Mbyte/sec] mars - INFO - 20190219.100505 - Writing to target file: 803.44 Kbyte(s) in < 1 sec [6.23 Mbyte/sec] mars - INFO - 20190219.100505 - Memory used: 58.08 Mbyte(s) mars - INFO - 20190219.100505 - No errors reported mar@donalbain:~/scratch/fdb5/anna> grib_ls -m initial_surface_sp initial_surface_sp domain date time expver class type stream anoffset step levtype number param g 20190218 1800 0001 od fc elda 3 1 sfc 14 134 1 of 1 messages in initial_surface_sp {noformat}

[No branch]

Elias Holm, Elias Holm - [No branch] - BIT IDENTICAL

Proposed reduction of EDA forecast length to 12 hours (IFS-725)

Elias has proposed a reduction of the EDA FC length to 12 hours. Add a Jira to keep track of this request.

[No branch]

Andrew Bennett - [No branch] - BIT IDENTICAL

prepIFS "an" suite with coupled ocean doesn't work with non-default FCLENGTH (IFS-737)

In a 46R1 CAMS "an" experiment with LNEMOCOUP=true, setting FCxx_HR in prepIFS to alter the lengths of the long forecasts of an analysis experiment appears to update the config.an.h correctly, but doesn't alter the FCLENGTH ecFlow variable on the "fc" family.

Unfortunately, its seems this is the variable that controls the length of the atmosphere forecast, while the length of the ocean forecast is controlled by the identically-named *shell* variable in config.an.h! This results in an error from ININEMO because the two forecasts are of different lengths.

For example, if I change FC00_HR and FC12_HR to 72 (they are 120 in the operational CAMS suite) then I end up with FCLENGTH=72 in config.an.h, but FCLENGTH=120 on the "fc" families in ecFlow, getting this error from "model": {noformat} INFORMATION FROM NEMO: INITIAL DATE : 20180701 INITIAL TIME : 0 INITIAL STEP : 1 FINAL STEP : 216 TIME STEP : 1200. NEMONSTEP : 3

INFORMATION FROM IFS: INITIAL DATE : 20180701 INITIAL TIME : 0 INITIAL STEP : 0 FINAL STEP : 240 TIME STEP : 1800. NFRCO : 2

Inconsistent NEMO and IFS run times. IFS run time is : 432000. NEMO run time is : 259200. ABOR1 CALLED ININEMO: ABOR1 CALLED{noformat} If I manually change FCLENGTH in ecFlow to match config.an.h (72 in this case) and re-run, then it works correctly.

See my "cxzk_CY46R1_short_fclength_bug" ifs−suites branch, which contains a new failing acceptance test (an_cams_nemo_short.def) to demonstrate this. Curiously the non-CAMS equivalent (an_inc4dvar_short .def) which I've created *doesn't* fail!

I can't figure out where the "Edit FCLENGTH '120'" is generated from, however, when I have this in parameters.py: {noformat} FC00_HR=72 FC06_HR=6 FC12_HR=72 FC18_HR=6{noformat} (There's related stuff hard-coded in the EmosStreamMACC class, but I don't think that's being used here since OD_MODE=False.)

I'm pretty sure this problem didn't occur in 45R1 or 45R2, although I could be wrong.

[No branch]

Andrew Bennett, Andrew Dawson, Axel Bonet, Paul Burton - diab_CY46R1_ecflow_4.12_triggers - BIT IDENTICAL

Incorrect ens_fetch_fields trigger for ecflow 4.12 (IFS-751)

ecFlow 4.12 has closed a loophole which allowed trigger expressions to refer to the parent node without a path. See the [release notes|https://confluence.ecmwf.int/display/ECFLOW/ecflow+release+4.12.0] for more details.

This causes acceptance tests to fail on EDA configurations when using ecFlow 4.12 because the triggers are no longer valid on the task an/obs/elda??/ ens_fetch_fields , which refers to the parent node elda?? without a path.

This fix simply adds a relative path to the trigger to make it work for ecFlow 4.12. It is also backward compatible.