

REPLACING COMMAND LINE BY NAMELIST VARIABLES.

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1 Introduction and purpose.

The OOPS project may bring some issues to keep a subset of “command line” variables; and we try to quantify the work to do in order to replace command line variables by namelist ones.

The basis of this study is cycle CY39.

2 Current status of the command line.

Variables of the command line are in module YOMARG, and some of them are filled in SUARG, called by SU0YOMA before SUCT0.

The content of YOMARG can be divided into several items:

- Control variables: NARGS, NUCONF, NUSTOP, NUECMWF, NUSLAG, LUELAM, CUNMEXP. NUCONF to CUNMEXP are the mirror of some YOMCT0 variables (respectively NCONF, NSTOP, LECMWF, LSLAG, LELAM, CNMEXP).
- Timestep: UTSTEP. Is the mirror of TSTEP (currently in YOMDYN, but it would be desirable to move TSTEP in YOMCT0 in the future).
- Calendar: NUDATE and NUSSSS. Is the mirror of NDATEF and NSSSSS (in YOMRIP).
- Horizontal geometry: NULOEN, NUMEN, NUHTYP, ULOCEN, UMUCEN, ULIM (for LAM models), USTRET, UGEMU (for LAM models), NUSMAX, NUTMAX, NUCMAX, NUDGL, NUDLON, NUSTTYP. These variables have mirror counterparts in various modules (YOMDIM, YOMGEM, YOMGC for example).
- Vertical geometry: UVALH, UVBH, NUFLEV. These variables have mirror counterparts in various modules (YOMDIM, YOMVV1).

Control variables and timestep are read on the command line. If the command line option is switched on, calendar and geometry are read in the file frame (and that avoids to put long sequences of values in namelists, especially for variables like NRGRI, DVALH and DVBH).

YOMARG is used in the following routines: SUARG, SUCT0, SUDFI, SUDIM1, SUEDIM, SUDYN, SUEGEM1A, SUEGEM_NAML, SUFA, SUFPC, SUFPD, SUGEM1A, SUGEM_NAML, SURIP, SUVV1.

3 Replacing command line variables by namelist ones.

We now retain proposal of Ryad which can be done in one step. This method requires the introduction of the new namelist element NAMARG. It would be interesting to keep the functionality of reading geometry in file frame.

3.1 Different steps of coding and validation.

We introduce the new element NAMARG (read in SUARG). The following variables are moved into NAMARG:

- LELAM (currently in NAMCT0).
- NCONF (currently in NAMCT0).
- LECMWF (currently in NAMCT0).
- CNMEXP (currently in NAMCT0).
- CUSTOP.
- LSLAG (currently in NAMCT0).
- TSTEP (currently in NAMDYN).

Additionally:

- TSTEP must be moved from YOMDYN to YOMCT0 with a simplified set of default values.
- A new variable NSUPERSEDE must be introduced in NAMARG/YOMARG/SUARG. NSUPERSEDE=1 means that date and geometry are read in initial file frame; NSUPERSEDE=0 means that date and geometry are read in namelists.
- Variable NARGS disappears.

NAMARG (read in SUARG) must be copied in YOMARG variables in routine SUARG:

- NCONF copied in NUCONF (at this level value equal to 2 is still allowed).
- CUSTOP: equivalent of current CLSTOP used in SUARG.
- NUECMWF=1 if LECMWF=T, 2 if LECMWF=F.
- NUSLAG=1 if LSLAG=T, 3 if LSLAG=F.
- LELAM copied in LUELAM.

- CNMEXP copied in CUNMEXP.
- TSTEP copied in UTSTEP.

SUARG must be adapted. In particular, tests ($NARGS > 0$) become ($NSUPERSEDE==1$).

Some default values must be given to these variables:

- LELAM=.FALSE..
- NCONF=1.
- LECMWF=.TRUE..
- CNMEXP='0123'.
- CUSTOP='-9'.
- LSLAG=.TRUE..
- TSTEP: a simplified set of default values must be given to TSTEP in SUCT0 (3 default values respectively for LECMWF=T, ARPEGE-METROPOLE and AROME).
- NSUPERSEDE=1.

The other routines using NARGS or YOMARG must be adapted: SUARG, SUCT0, SUDFI, SUDIM1, SUEDIM, SUDYN, SUEGEM1A, SUEGEM_NAML, SUFA, SUFPC, SUFPD, SUEGEM1A, SUEGEM_NAML, SURIP, SUVV1.

- SUCT0:
 - Modify LELAM if LFPART2.
 - Set default value of LRPLANE according to LFPART2 and LELAM.
 - Paragraph giving defaults to LECMWF and CNMEXP disappear (all is done in SUARG).
 - Paragraph giving defaults to NCONF disappear (all is done in SUARG).
 - Paragraph giving defaults to NSTOP disappear (all is done in SUARG).
 - Paragraph giving defaults to LSLAG disappear (all is done in SUARG).
 - Paragraph giving defaults to NHISTS, NPOSTS .. must be simplified (tests on LFPART2 and NCONF only).
 - Paragraph 2.2 disappears.
- SUDFI:
 - Replace UTSTEP by TSTEP.
 - Code under ($NARGS / = 0$) must be always done.
- SUDYN:
 - Setup of TSTEP must disappear (all is done in SUARG+SUCT0).
 - Call to SUTSTEP and printings immediately after this call disappear. Routine SUTSTEP can be removed.
 - No reference to UTSTEP must remain.
- SUFPC: nothing to do?
- Other routines: generally:
 - Replace UTSTEP by TSTEP.
 - Replace tests ($NARGS > 0$) or ($NARGS / = 0$) by ($NSUPERSEDE==1$).
 - Replace tests ($NARGS == 0$) by ($NSUPERSEDE==0$).
 - Replace printings 'OVERWRITTEN BY COMMAND LINE' by 'OVERWRITTEN BY VALUES COMPUTED IN SUARG'.

4 References.

- (IDSULC) El Khatib, R., 1993: Le setup par ligne de commande: description et mode d'emploi. Internal note in French valid for cycle 11 (dated 3 June 1993), 7pp. Update internal note from 15 Feb 1994, 1p.