NWP at Met Éireann
ASM 2011
Eoin Whelan

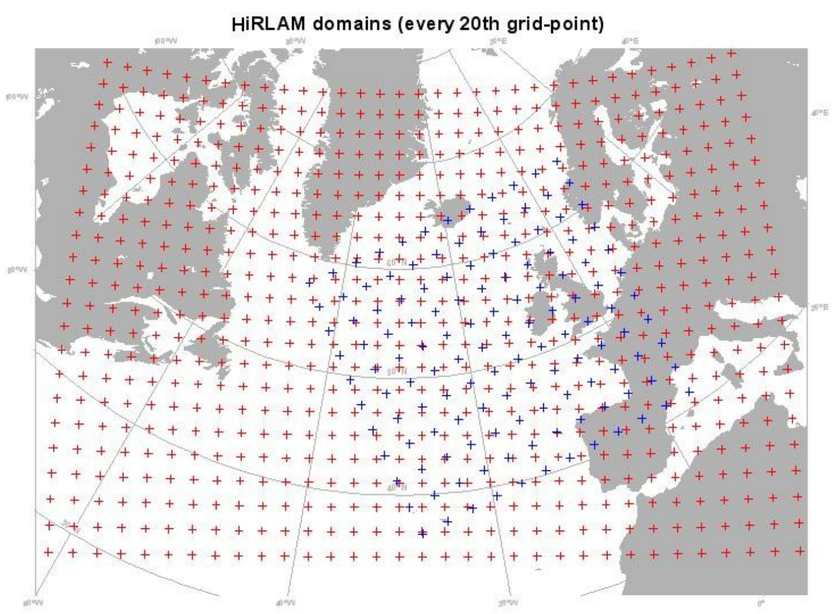
HIRLAM - Overview

HIRLAM is used at Met Éireann to produce operational forecasts out to 54-hours. The model [7.2 with 4DVAR] is run four times per day using 168 CPUs on the stokes cluster at ICHEC [www.ichec.ie].

Met Éireann runs NWP models on the ICHEC supercomputer, stokes, an SGI Altix ICE 8200EX cluster with 320 compute nodes. Each compute node has two Intel (Westmere) Xeon E5650 hex-core processors and 24GB of RAM. This adds up to a total of 3840 cores and 7680GB of RAM available for jobs.

HIRLAM - Data Assimilation

- **Observations: SYNOP, SHIP, BUOY, AIREP, AMDAR, ACARS, TEMP, TEMPSHIP, PILOT**
- **Analysis: 4DVAR with a 1h50m cut-off (for *Main* HIRLAM)**
- **Analysis: 3DVAR used for *Nested* and *Hourly* HIRLAM)**
- **Cycle: Six-hour cycle using the forecast from the previous cycle as a first-guess**
- **LSMIX: A *re-forecast* is carried out every cycle**



HIRLAM - Lateral boundaries

- **Latest available ECMWF frame files are used**
- **Frames received on same 0.1°x0.1° rotated lat-lon grid as the *Main* Atlantic domain HIRLAM grid with 60 vertical levels**
- **GRIB2 dissemination files currently being tested**

HIRLAM - *Main* Atlantic domain

- **No deviation from default settings**
- **No local adaptations made to forecast model**
- **Rotated lat-lon 654x424 with 60 levels**
- **Δx=Δy=0.1° with 60 vertical levels**

HIRLAM - *Nested* Irl&UK domain

- **A nested version of HIRLAM is also run after the main run has finished and produces 30-hour forecasts 4 times per day**
- **438x395 horizontal grid points**
- **Δx=Δy=0.05° with 60 vertical levels**

HIRLAM - *Hourly* Irl&UK domain

- ***Hourly* HIRLAM produces a 6-hour forecast every hour.**
- **166x163 horizontal grid points**
- **Δx=Δy=0.15° with 60 vertical levels**

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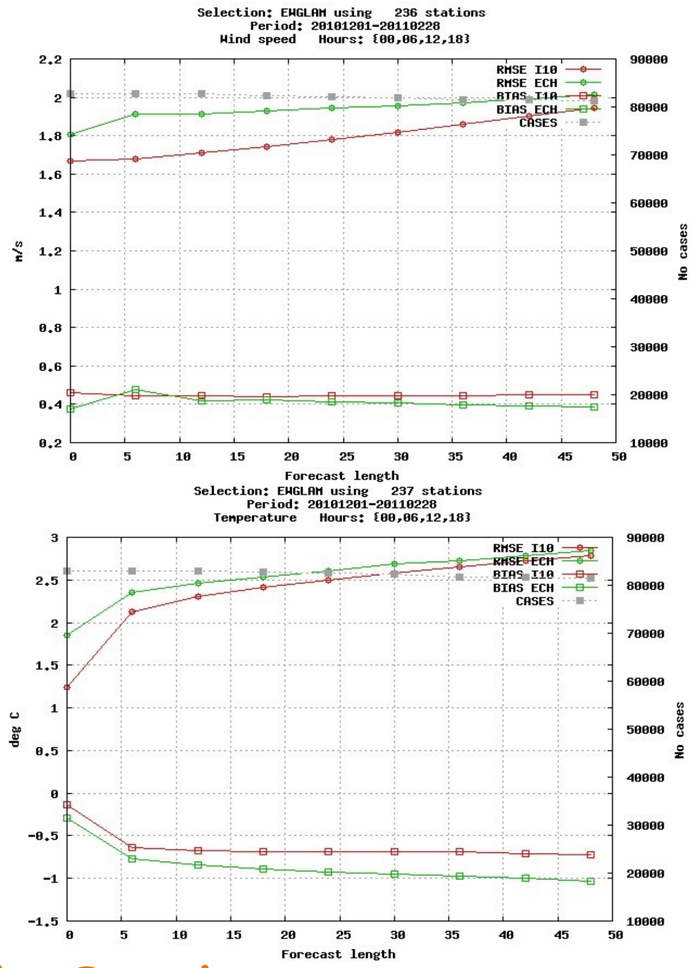
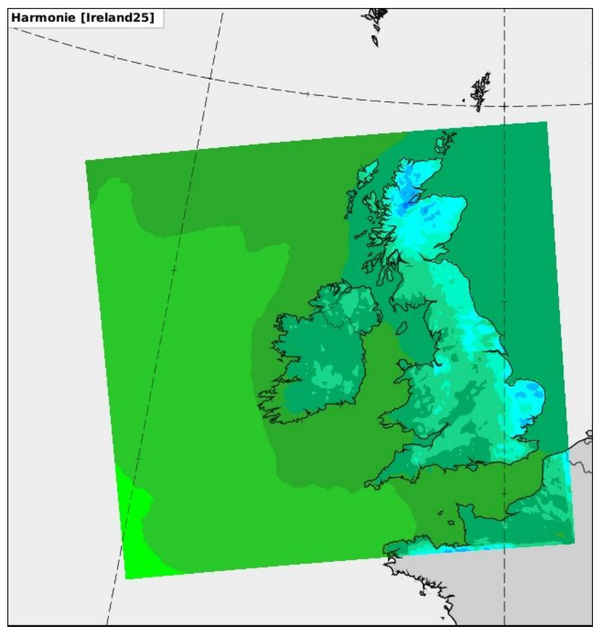
HIRLAM-Verification



Harmonie - Overview

- **Harmonie 36h1.3 is running pre-operationally**
- **30 hour forecast is produced four times per day**



Harmonie - Data Assimilation

- **No upper air data assimilation, yet**
- **Surface data assimilation (CANARI + SURFEX OI) used**

Harmonie – Forecast Model

- **Dynamics: ALADIN-NH**
- **Physics: AROME**
- **Surface: SURFEX**

Harmonie – Ireland25 domain

- **540 x 500 horizontal grid points**
- **Δx=Δy=2.5km with 60 vertical levels (same as HIRLAM)**
- **Time-step used: Δt=60s**

Harmonie-Verification