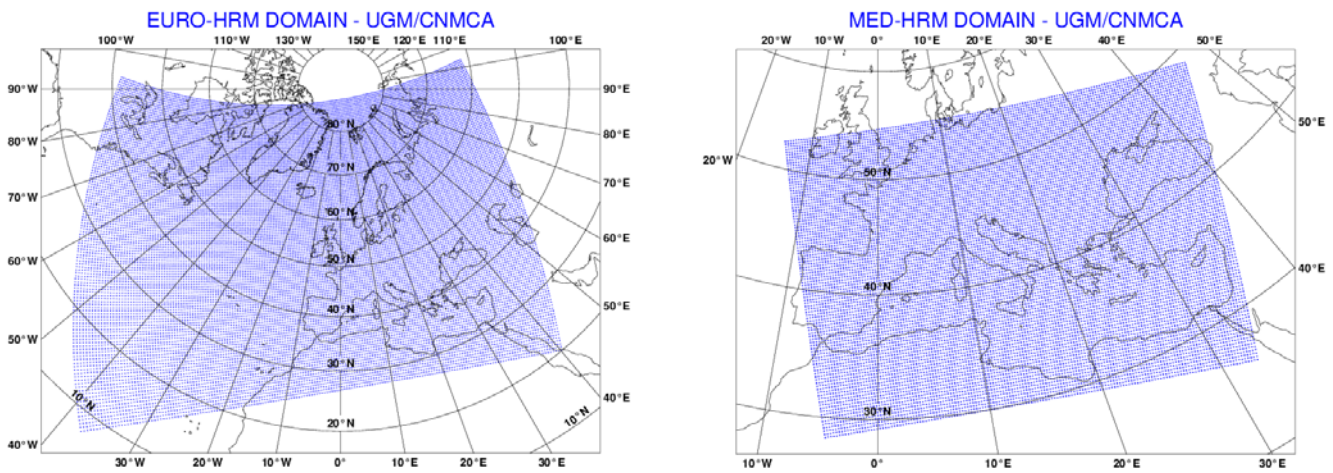


# Italian Meteorological Service Status Report

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## Hydrostatic Modelling

The main focus of the activities over the past year has been the operational implementation of an intermittent 6-hourly data assimilation cycle for the HRM model over the EURO domain of integration. The main characteristics of the HRM hydrostatic model are summarized in tables 1.1 and 1.2 for the EURO integration domain and the nested MED integration domain.



**Fig.1 Integration domains for the HRM hydrostatic model**

Domain size	181 x 121
Grid spacing	0.5 (56 km)
Number of layers	31
Time step and integration scheme	300 sec , split semi-implicit
Forecast range	72 hrs
Initial time of model run	00/12 UTC
Lateral boundary conditions	IFS
L.B.C. update frequency	3 hrs
Initial state	Statistical Analysis(Z,u,v,RH,Surf .Press.)
Initialization	N.M.I.
External analysis	None
Status	Operational
Hardware	Compaq DS20E
N° of processors used	2

**Table 1 Characteristics of EURO-HRM operational implementation**

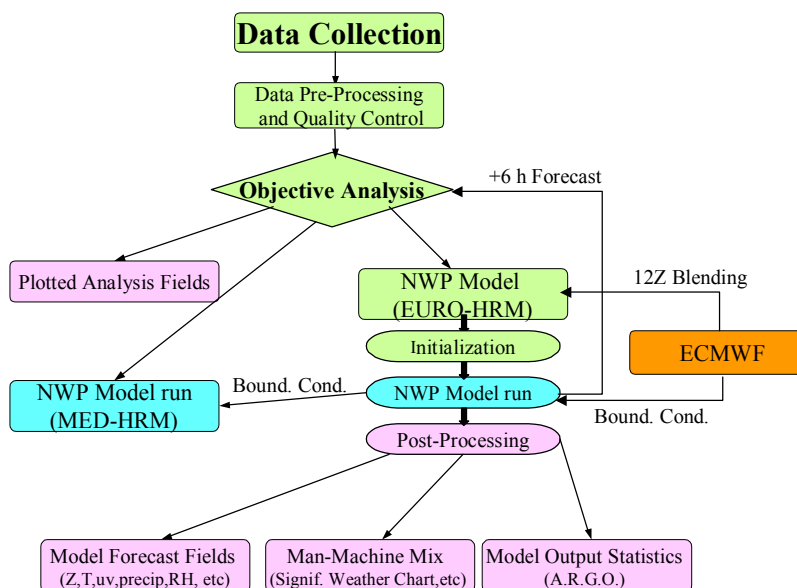
Domain size	151 x 101
Grid spacing	0.25 (28 km)
Number of layers	31
Time step and integration scheme	150 sec , split semi-implicit
Forecast range	48 hrs
Initial time of model run	00/12 UTC
Lateral boundary conditions	IFS
L.B.C. update frequency	1 hrs
Initial state	EURO-HRM
Initialization	N.M.I.
External analysis	None
Status	Operational
Hardware	Compaq DS20E
N° of processors used	2

**Table 2 Characteristics of MED-HRM operational implementation**

The main features of the objective analysis scheme employed in the data assimilation cycle are:

1. Global solution of analysis equations by direct solver;
2. Analyzed variables: Z,u,v,RH;
3. Geostrophic, quasi non-divergent constraint;
4. Interpolation Statistics from statistical analysis of observation increments.

A flow diagram of the data assimilation cycle is given in Fig. 2.



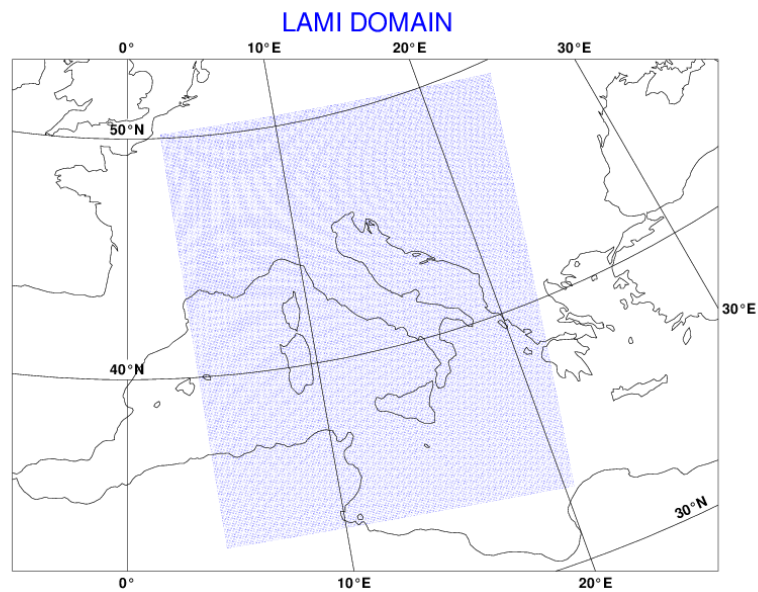
**Fig. 2 Flow diagram of the data assimilation cycle**

## Non-Hydrostatic Modelling

The main features of the operational implementation of the Lokal Model over the Italian domain of integration (LAMI) are summarized in Table 3 and Fig. 3.

Domain size	234 x 272
Grid spacing	0.0625 (7 km)
Number of layers	35
Time step and integration scheme	40 sec . 3 timelevel split-explicit
Forecast range	48 hrs
Initial time of model run	00/12 UTC
Lateral boundary conditions	GME
L.B.C. update frequency	1 hrs
Initial state	GME
Initialization	None
External analysis	None
Special features	Use of filtered topography
Status	Operational
Hardware	IBM SP4 (Bologna)
N° of processors used	32

**Table 3 Characteristics of LAMI operational implementation**



**Fig.3 Integration domain for the LM non hydrostatic model.**