



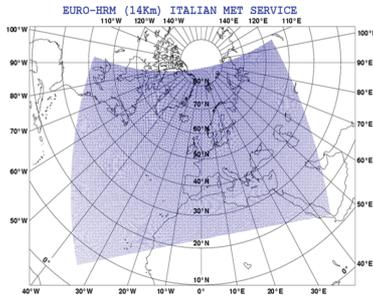
NWP at the Italian Meteorological Service



(Italian Met. Service - CNMCA Rome, Italy)

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REGIONAL MODELING



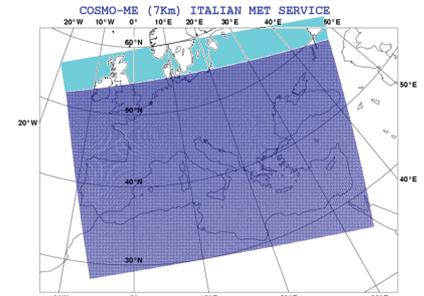
- Prognostic model: HRM (DWD hydrostatic model)
- Intermittent (3h) data assimilation cycle with IFS boundary conditions
- 3D-Var FGAT scheme
- Conventional OBS + AIRCRAFTS, Wind Profilers, AMSUA (NOAAxx + METOP), AMV, MODIS, ERS2/QSCAT/ASCAT scatt. winds

EURO-HRM

769x513	Domain size	641 x 401
0.125 (14 Km)	Grid spacing	0.0625 (7 km)
40	Number of layers	40
75 sec	Time step	40 s
72 hrs	Forecast range	72 hrs
00/12 UTC	Initial time of model run	00 UTC
IFS	Lateral bound. condit.	IFS
3 hrs	L.B.C. update freq.	3 hrs
CNMCA 3D-VAR FGAT	Initial state	Interp 3D-VAR FGAT
Incremental D.F.I.	Initialization	D.F.I.
None	External analysis	T,u,v, q, SP
None	Special features	Filtered topography
Operational	Status	Operational
IBM P690 (ECMWF)	Hardware	IBM P690 (ECMWF)
32 (Model), 90 (Analysis)	N of processors	120

COSMO-ME

LOCAL AREA MODELING

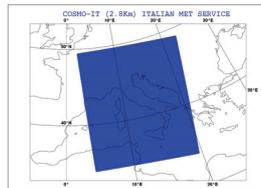


- Non-hydrostatic limited area modelling COSMO
- Input for commercial forecast products, EUMETSAT H-SAF programme and WAM winds
- Future developments:
 - Further domain extension
 - Runge Kutta scheme implementation

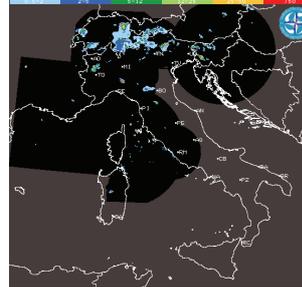
HIGH RESOLUTION MODELING: TOWARDS CONVECTIVE SCALE

COSMO-IT

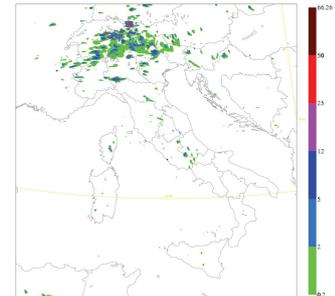
Domain size	542 x 604
Grid spacing	0.025 (2.8 km)
Number of layers / top	50 / ~22 km
Time step and scheme	25 s / RK3/5
Forecast range	36 hrs
Initial time of model run	00 UTC
Lateral bound. condit.	COSMO-ME (7km)
L.B.C. update frequency	1 hr
Initial state	Nudging
Initialization	None
External analysis	None
Special features	Filtered topography
Convection parameter.	Shallow convection
Status	operational
Hardware	IBM P690 (ECMWF)



RADAR COMPOSITE 30 JUL 2008 16:30 UTC
Surface Rain Intensity (mm/h)



30 JUL 2008 00 UTC Forecast T +17 VT: 30 JUL 2008 17 UTC
Total Surface precipitation in a 01 hours interval



The 2.8 km COSMO-IT has been running at the Italian Rain Met. Service since October 2006. During this period an intensive verification and tuning of the model has been performed in order to reach an operational level of skill.

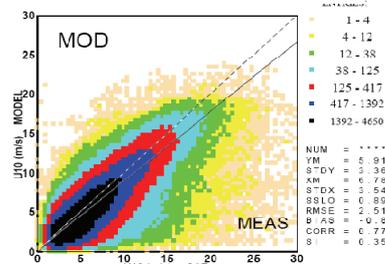
MEDITERRANEAN SEA FORECASTING USING COSMO-ME

(in collaboration with ISMAR-CNR)

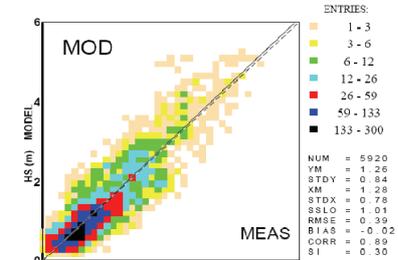
Surface winds from COSMO-ME are used as atmospheric forcing in WAM 4.0 model (Komen et al, 1994)

- Lat lon regular grid (3')
- Spectral discretization with 30 frequencies and 24 directions
- Time step integration 120 s
- Initial state from previous run
- Initial time of model run 00 UTC
- Forecast range to 72 h
- OUTPUT: Significant wave height, Mean wave direction, mean wave period

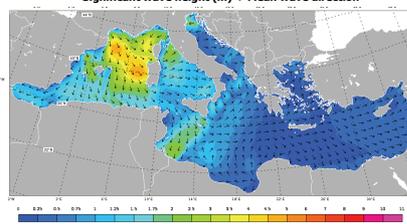
WIND COSMOME_16 MODEL AND QSCAT DATA IN THE MEDITERRANEAN SEA period: DECEMBER 2006



WAM WAVE (COSMOME_16 WIND) MODEL AND JASON DATA IN THE MEDITERRANEAN SEA period: 1-31 DECEMBER 2006



CNMCA 13 sept 2008 00 UTC Forecast T +36 VT: 14 sept 2008 12 UTC
Significant wave height (m) + Mean wave direction



CNMCA 13 sept 2008 00 UTC Forecast T +36 VT: 14 sept 2008 12 UTC
Mean wave period + Mean wave direction

