

The CNMCA (Italian National Meteorological Center) Operational LETKF Data Assimilation System: recent developments

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The Italian National Meteorological Center has tested and implemented an ensemble data assimilation algorithm based on the LETKF approach [1]. The CNMCA-LETKF data assimilation system [2,3] is used operationally to initialize the deterministic COSMO-ME model (7km) since 1 June 2011. LETKF is running with 40+1 members having a 10 km grid spacing. Recently the change of the prognostic model (from HRM to COSMO) has been evaluated.

The observational dataset operationally ingested comprises radiosonde ascents (RAOB, surface pressure observations from land and sea stations (SYNOP, SHIP, BUOY), manual and automatic aircraft observations, atmospheric motion vectors from Meteosat 9, European wind profilers, scatterometer winds from METOP and AMSU-A radiances. First results of forecast sensitivity to observations (FSO [4]) will be presented.

Moreover, COSMO-ME forecasts initialized by LETKF and IFS 4D-Var analysis were objectively compared. LETKF gives verification results slightly worse or similar to IFS 4D-Var analysis, but it should be taken into account that LETKF runs with less observations than IFS 4DVAR (shorter cutoff time and less satellite observation types)

References

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