



On the use of ATOVS Radiances in regional NWP: direct assimilation vs retrievals assimilation

M. Bonavita, L. Torrisci, A. Vocino

Centro Nazionale di Meteorologia e Climatologia Aeronautica (CNMCA)

Pratica di Mare, Rome, ITALY

email: bonavita@meteoam.it

Fax: +39 06 9129 3490

The EUMETSAT ATOVS retransmission service (EARS) has provided National Weather Centers in Europe with the possibility of receiving ATOVS pre-processed radiances from the NOAA polar orbiters constellation in time for use in operational regional NWP models.

At the Italian Weather Service experimental use of the EARS product has been set up in the context of the operational 3DVar data assimilation cycle, in order to evaluate the impact of the new data on the analysis and forecast fields' quality.

Two approaches are currently being investigated: In the first one interactive, non-linear 1DVar Temperature and Humidity retrieved profiles in clear sky, sea areas are ingested in the 3DVar analysis as pseudo-RAOB observations. The second technique involves the direct assimilation of a selection of AMSUA radiances using the traditional tangent linear approximation.

Discussion of results obtained so far and objective verifications against the european synoptic observing network is given.

The pros and cons of the two methods are examined, also in view of the problems that the operational use of the next generation of hyperspectral sounders observations will pose to the NWP community.