Near real time evaluation system of the Spanish air quality forecasting model CALIOPE

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The most recently adopted European Directive on Ambient Air Quality and Cleaner Air For Europe (Dir. 2008/50/EC) promotes the use of air quality models to provide geographically distributed information about air quality levels. Therefore it is fundamental to establish the reliability of the currently used models to help decision makers and final users.

The WRF-ARW/HERMES/CMAQ/BSC-DREAM8b modelling system provides high resolution air quality predictions for 48h in Europe –EU- (12x12 km2, 1h), the Iberian Peninsula and Balearic Islands –IP- (4x4 km2, 1h) and Canary Islands -CAN- (2x2 km2, 1h) since July 2007, under the framework of the CALIOPE project (http://www.bsc.es/caliope/). A near real time evaluation system has been developed and it is in operation since January, 2009. Non validated near real time air quality data from more than 130 surface stations are compared to ground concentration predictions in Spain. Seven ozonosondes are used to test the performance of the model in reproducing O_3 vertical structures in Europe, Spain and the Canary Islands. Additionally OMI images are used to qualitatively assess the vertical column densities of NO_2 for Europe.

The present contribution will describe the main characteristics of the near real time evaluation system of the CALIOPE model. The skills of the model in the forecast mode will be discussed for O_3, NO_2, SO_2, $PM10$ and $PM2.5$ at surface level and for NO_2 column and ozone vertical structure.