Verification of Numerical Weather Prediction limited area models by remote sensing observations

O. Drofa (1), P. Malguzzi (1), A. Buzzi (1)

(1) Institute of Atmospheric Sciences and Climate, National Research Council (ISAC-CNR)

Two NWP models are currently developed by the Dynamic Meteorology group of the Institute of Atmospheric Sciences and Climate (ISAC-CNR): the hydrostatic model BOLAM and the non-hydrostatic convection resolving model MOLOCH. Both models are successfully employed in operational forecast by various meteorological services. A many-sided verification is an important component of this development. Two case-studies, characterised by the presence of intense weather systems in the North Mediterranean region, are simulated by both models. The analysis is based on the comparison between satellite observations taken from the Meteosat-7 and their simulated analogues obtained by the RTTOV software, developed in the context of the EC project SAF. This technique turns out to be very useful for the evaluation of the model dynamical and physical scheme performance. In addition, data from the meteorological radar of the Ligurian Meteorological Centre (ARPAL-CFMI) are being compared to simulated radar reflectivity derived from the 3-D precipitation field of the MOLOCH model. This work demonstrates the benefit of atmospheric remote sensing observations for the verification of NWP models. This effort has been carried out as part of EC project AMPHORE.