EMS Annual Meeting Abstracts Vol. 10, EMS2013-250, 2013 13th EMS / 11th ECAM © Author(s) 2013



Representativity of a mesonet temperature observations with respect to model fields

F. Uboldi (1) and C. Lussana (2)

(1) Consultant, Milan, Italy (uboldi@magritte.it), (2) ARPA Lombardia, Milan, Italy (c.lussana@arpalombardia.it)

Observations from mesoscale networks are affected by the whole range of dynamic scales, including very small and fast scales that cannot be adequately resolved even by high-resolution, convection resolving models. Representativity error should then accounted for when comparing model fields with observations. An important component of representativity error arises from the difference between model and real orography.

In this work, model analysis fields are estimated at station locations by simple interpolations, and the statistical properties of the estimate-observation differences are studied, depending on season and hour. Moreover, local orographic features are used to separate observing sites in "Plain", "Valley" and "Mountain" stations (PVM classification).

By characterizing the sample distribution of estimate-observation differences at each station location, it is possible to estimate the systematic error (mainly, but not only due to orography difference) and to classify the network stations for their representativity with respect to each of the models: ECMWF-IFS, COSMO-I7, COSMO-I2.