EMS Annual Meeting Abstracts
Vol. 8, EMS2011-510, 2011
11th EMS / 10th ECAM

Forecasting the weather
- ensemble techniques
in probabilistic weather prediction

Blending the probabilistic nowcasting method Rad-TRAM with a time-lagged COSMO-DE ensemble for precipitation forecasts in different regimes

K. Kober, G.C. Craig, and C. Keil

Ludwig-Maximilians-Universität München, Meteorologisches Institut, Germany (kirstin.kober@lmu.de)

A seamless prediction of convective precipitation for a continuous range of lead times from 0 to 8 hours requires the application of different approaches. Here, a probabilistic nowcasting method and a high-resolution time-lagged ensemble are combined to provide probabilistic convective precipitation forecasts. Concerning the nowcast, the probabilistic version of Rad-TRAM is used to predict the probability that a threshold in radar reflectivity (19dBZ) is reached. For the model forecasts, COSMO-DE forecasts up to 21 hours are initialised every 3 hours. Three approaches are applied to the resulting time-lagged ensemble to derive the probability that a threshold in synthetic radar reflectivity (19dBZ) is reached. The model forecasts are calibrated with the reliability diagram statistics method.

The evolution of forecast skill with lead time determines the weighting functions of the nowcasting and the ensemble method for the additive combination. The combination of both approaches provides a seamless and skillful probabilistic forecast of convective precipitation. The concept is validated using a sample of 100 days in summer 2009.

It is planned to use the concept of convective time scale to consider the dependance of forecast skill and calibration on meteorological regimes.