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Forecasting the weather
- ensemble techniques
in probabilistic weather prediction

A quantitative evaluation of the HARMONIE model for critical weather phenomena

E. van der Plas and B. Wichers Schreur

Royal Netherlands Meteorological Institute, De Bilt, The Netherlands (www.knmi.nl)

The IMPACT project aims to evaluate the non-hydrostatic model HARMONIE (2.5 km grid size), being developed by the Hirlam/Aladin consortium, for a series of cases in which the weather was critical to the operations of Schiphol Airport (Amsterdam, The Netherlands). The study extends to all disrupting weather phenomena, such as wind gusts, fog, heavy rain and snow. The influence of the domain size and the host model are quantitatively studied using a.o. the Model Evaluation Tool (MET). The performance of the HARMONIE model using Hirlam and ECMWF reanalysis boundaries and using the output from the regional climate model RACMO as boundary input is assessed and compared to observations. The combination of HARMONIE and MET will allow for a day-to-day meso-scale verification of meso-scale phenomena such as convective precipitation with respect to radar observations. It also enables the statistical identification of rain bands and convective systems. We will further discuss its use in theoretical findings on frontogenesis and the propagation of rain bands.