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SRNWP-PEPS: An operational regional multi-model ensemble in Europe

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The EUMETNET Short-Range Numerical Weather Prediction Programme (SRNWP) incorporates the four modelling consortia HIRLAM, ALADIN, COSMO and the UK Met Office. The weather services associated to these consortia produce a reasonable variety of operational forecasts on different domains with different grid resolutions using different model parameterisations or releases and data assimilation techniques.

Since 2005 the DWD has integrated all available high resolution numerical forecasts in a Poor Man's Ensemble Prediction System (PEPS). This multi-model ensemble currently generates operational probabilistic forecasts for Europe. The single model forecasts are interpreted on a horizontal reference grid. The basic PEPS assigns equal weights to the ensemble members and uses a nearest neighbour grid mapping for the interpolation to the PEPS grid. Since the individual models have different domains the ensemble size depends on location. For selected meteorological parameters ensemble mean/median are calculated. Exceedance probabilities of certain thresholds are determined by counting the corresponding members at each grid point.

The PEPS forecasts are distributed to the members in operational mode and will contribute to the TIGGE-LAM database. Although not all weather services provide their data at all times, a long data set has been build up at the DWD which can be used for research.

The evaluation of the PEPS products by DWD forecasters has shown that in case of synoptic scale events the ensemble is very helpful to support the decision making process. The system generates stable forecasts and provides a useful guidance in situations when single models show great differences. However, these simple PEPS forecasts are still biased and further work is focused on calibration and a comparative verification against other EPS's. We will give an update on this work.