*Forecasting the weather
- ensemble techniques
in probabilistic weather prediction*

Retrospective Analysis of Regional Climate
Phase I: German Reanalysis Project

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The German Reanalysis Project is the first phase (2011-2014) of the joint project Retrospective Analysis of Regional Climate for Use in Climate Change Analysis funded by the Hans Ertel Centre for Weather Research programme (HErZ).

Overall vision of the project is to develop a self-consistent assessment and analysis of regional climate in Germany and Central Europe over the past decades at an appropriate spatial and temporal resolution. It encompasses the synergetic use of heterogeneous monitoring networks, including historical station data and satellite data, to construct state-of-the-art regional reanalysis data sets for Germany and Central Europe and their evaluation.

The reanalysis will be based on the current forecast system at the German Meteorological Service (DWD). A data basis of free-atmosphere, near-surface, and soil-vegetation observations is extended with respect to the operational use and assimilated in a limited area model. The regional reanalysis will be based on the COSMO-DE model with a horizontal grid spacing of 2.8 km resolution, as it is in operational use at DWD. Two different versions of the reanalysis will focus on the comparably short time frame of 5 years with the maximum amount of observation data and nested into ERA-interim, and the past decades with a reduced data basis, in order to aim at more homogeneous time series than typically available in long-term reanalyses.

The German Reanalysis Project will provide a quality-controlled and homogenised data set as a basis for the detection and assessment of regional climate change in past and future, for the statistical postprocessing of operational forecasts, for the analysis of systematic model errors of the respective regional model, and for verification and calibration of impact models like e.g. hydrological models.