



Long-term evaluation of water cycle variables in short-term weather forecasts

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Since the beginning of 2007 a so-called "General Observation Period" (GOP) within the German Priority Program on Quantitative Precipitation Forecast (QPF) gathers a comprehensive observational dataset especially devoted on atmospheric variables of the hydrological cycle. Among others rain gauge, radar, ceilometer, GPS and satellite observations are used to evaluate the COSMO models of the German Weather Service (DWD). Two different versions are used (1) with 7 km horizontal grid spacing, parameterized convection, covering whole Europe (COSMO-EU), and (2) with 2.8 km horizontal grid spacing, permitting explicit convection, covering Germany and parts of neighboring countries (COSMO-DE). Forecasts are started every three hours with 21 h forecast time. Therefore for each target time a "lagged ensemble" with up to eight forecasts is available.

We will show long-term (several months up to one year) evaluation results of COSMO-DE and COSMO-EU forecasts against GOP observations. Special emphasis will be given to dependencies of model behavior and forecast quality on forecast lead time, time of the day, start time of the model run, and weather situation (by an objective weather type classification). Finally, we want to connect the forecast quality of water cycle parameters, e.g. from water vapour to clouds and precipitation.