**Continuous Evaluation of Atmospheric Models Using a Combination of Different Observations – the General Observation Period (GOP)**

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Precipitation forecasts are hindered by the fact that precipitation itself is the end product of a complex process chain. Therefore when trying to identify and eventually overcome the deficits of precipitation forecasts all variables involved in these processes need to be considered. This approach is the underlying theme of the General Observation Period (GOP; Crewell et al., 2008] which takes place as part of the German priority program on Quantitative Precipitation Forecast (QPF) since the beginning of 2007. For an area focusing on central Europe observations by in-situ and remote-sensing instruments with special focus on water cycle variables are used for a long-term evaluation of the numerical weather prediction models COSMO-EU and COSMO-DE of the German Meteorological Service. Model output is tailored to match the observations and perform model evaluation in a near real-time environment (http://gop.meteo.uni-koeln.de/). Since these models are run as a lagged-ensemble where new forecasts are started every 3 h it is possible to investigate systematically model behavior.

First analyses using GPS network data could reveal that the dry bias evident in daytime RS92 radiosondes leads to drier forecasts when model runs are started at noon and afternoon compared to those started at other times. Interestingly, the drier model runs gain moisture with time as can be seen from GPS and nighttime radiosonde observations. The influence of this effect on cloud and precipitation development is investigated using ceilometer, radar and satellite data. A weather type classification indicates the dependence on larger scale dynamics. The presentation will provide an overview about the GOP observations, evaluation procedures and first results. Here we will also relate the results to those of the Convective and Orographically-induced Precipitation Study (COPS) from June to August 2007 in the Black Forest which focused on convective precipitation