



Operational ensemble forecasting in the Kamp catchment, Austria

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In this paper we analysed ensemble flood forecasts as a part of the real time flood forecasting system for the Kamp river in northern Austria using the INCA precipitation forecasting method, which combines numerical weather predictions from the limited area model ALADIN VIENNA and the global predictions of ECMWF with radar nowcasting traces. For the runoff predictions we used a spatially distributed conceptual water balance model based on a $1 \times 1 \text{ km}^2$ grid. Forecasts are needed every 15 minutes. By comparing the predicted runoff with the observed runoff we firstly analysed the distribution of forecast errors for the catchment of stream gauge Zwettl/Kamp with a size of 622 km^2 . These errors represent only the forecast errors due to uncertain rainfall input assuming the runoff model uncertainty is small. In a second step we generated ensembles of the rainfall predictions using ensemble forecasts of the ECMWF model (50 realisations). These were downscaled to the size of the Kamp catchment. We then matched the spread of the realisations in terms of flood flows with the error distribution of the flood predictions. This allowed us to realistically represent forecast uncertainties.