



## **Verification of the precipitation forecasts of a limited area model and a regional ensemble prediction model for flood-producing situations in Central Europe.**

Jan Bliefernicht (1), András Bárdossy (2), and Christian Ebert (3)

(1) Institute of Geography, University of Augsburg, Germany (Jan.Bliefernicht@geo.uni-augsburg.de /Phone: ++49 821 598 5518), (2) Institute of Hydraulic Engineering, University of Stuttgart, Germany, (3) Bavarian Environment Agency, Munich, Germany

Precipitation forecasts of limited area models can be used as input information for hydrological models to perform a short-range or medium-range flood prediction for river basins. Unfortunately, the precipitation forecasts of limited area models have a low accuracy for rare precipitation events and reliable warning information cannot be provided by a flood prediction model. To describe the uncertainty of precipitation forecasts, the forecasts of regional ensemble prediction models can be selected as input information for flood prediction. In this study we select the precipitation forecast of the COSMO-LEPS to evaluate the predictions of a regional ensemble prediction model for areal precipitation of mesoscale river basins. The ensemble forecasts are compared to the precipitation forecast of the limited area model, the COSMO-EU. The precipitation forecast of this model is usually used at the regional flood forecasting centres in Germany as information for short-range flood forecast. The study is performed for several tributaries and head catchments of the main rivers in Germany. In this presentation the following issues are highlighted: (i) the low accuracy of precipitation forecast of the limited area model for extremes; (ii) the benefit of the ensemble predictions in comparison to the forecast of the limited area model; (iii) a strategy for decision makers to maximize the benefit from ensemble forecasts in warning situations. The presentation ends with a brief discussion of benefits and problems which might occur if the forecasts of regional ensemble prediction models will be used for flood prediction.