



The Impact Of Calibration and Reforecasts of Ensemble Prediction System of Inputs on a Flood Forecast System

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The pre-operation European Flood Alerts System (EFAS) relies on reliable and accurate input by ensembles of Numerical Weather Predictions (NWP). The usage of such inputs for Probabilistic Quantitative Hydrology Forecast is still difficult as a variety of uncertainties arise. For example, forecasts are biased and the ensemble spread of forecasts is often under- or overestimating observational variances. Moreover, anthropogenic effects (land use, urbanization and dykes), climate change, and tectonic/isostatic relief change, which affect return periods, significantly influence the quality of flood forecasts. In order to access to the hazard associated to the hydrological forecast issued by EFAS, we compare two methods to calibrate the ensemble forecast, especially Ensemble Prediction System (EPS) of ECMWF, as the inputs of EFAS:

1. Reforecast for regional meteorological forecast
2. Calibrating EPS for regional meteorological forecast.

The results will be evaluated in terms of Talagrand diagram, Continuous Rank Probability Score (CRPS), spread skill relationship and Relative Operating Characteristic (ROC).