



## **Evaluation of distributions of quasi-stochastic discharges in Rhine catchment**

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Aon Benfield's catastrophe development unit Impact Forecasting is developing in collaboration with University of East Anglia (UEA) and Karlsruhe Institute of Technology (KIT) a pan-European flood event set which will link together all its country based catastrophe flood models used in re/insurance industry. The event set will be based on long time series (several thousand years) of simulated precipitation and temperature fields over Europe generated by KIT from MPI-ESM GCM and dynamically downscaled to 25 km using COSMO-CLM regional climate model. This data is used as an input for the bespoke rainfall-runoff model developed by UEA to calculate time series of discharges and identify flood events. This contribution demonstrates the performance of the proposed methodology using Rhine basin as testing area. We use 1000 years of simulated precipitation and temperature fields and model the discharges at 70 gauging stations in Rhine basin. Finally we compare the observed discharge distributions at these gauging stations with modeled discharge distributions with focus on the upper quantiles of the distributions to quantify the performance for discharge peak (flood) detection.