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## Synthetic rainfall for Germany based on simulations from two stochastic models

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For planning of urban drainage systems using hydrological models, long, continuous precipitation series with high temporal resolution are needed. Since observed time series are often too short or not available everywhere, the use of synthetic precipitation is a common alternative.

This contribution discusses the results of a research project, providing 5-minutes continuous stochastic point rainfall data for entire Germany for urban hydrological applications. Two different stochastic rainfall models are employed: a parametric stochastic model based on Alternating-Renewal processes and a non-parametric approach based on Resampling. Using rainfall observations from about 800 stations in Germany, the parameters of the models are regionalized. Rainfall and discharge characteristics are utilised for the evaluation of the model performance using a subset of 45 stations.

The results show, that stochastic rainfall from either of the models is better suited for urban hydrologic design, compared to the common practice scenario, where data from the nearest precipitation station is used. Notably, it could be shown that a mixture of generated rainfall from both models leads to a compensation of errors and further improves results, contrasted with using only data from one single model.