



Influence of temporal rainfall distribution on surface runoff modelling

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Temporal rainfall distribution within individual rainfall events can have large impact on the surface runoff characteristics such as the peak discharge values and time to peak discharge. Thus, the information about temporal rainfall distribution within rainfall event is crucial for reliable hydrological modelling, design of hydraulic structures and flood protection. The main aim of this study is to show how incorrect identification of temporal rainfall distribution can influence on surface runoff modelling results and consequently on the design hydrographs.

For the purpose of this study calibrated and validated hydrological model HBV-light of the Savinja catchment in Slovenia (catchment area: 1850 km²) was used. The automatic calibration was performed using the PEST tool. Using the hydrological model it was shown that uniform rainfall distribution within rainfall event and rainfall event durations that are significantly larger than the critical rainfall duration can lead to incorrect identification of the design parameters such as hydrograph shape and peak discharge.