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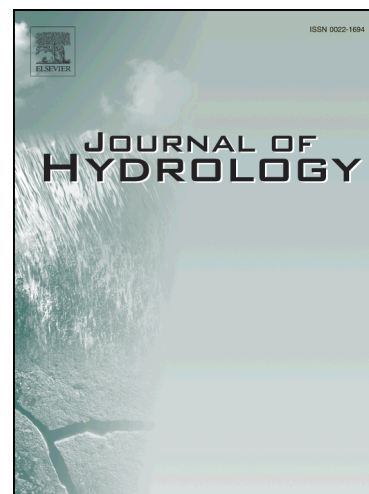
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# Coupling Poisson rectangular pulse and multiplicative microcanonical random cascade models to generate sub-daily precipitation timeseries

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## Abstract

To simulate the impacts of within-storm rainfall variabilities on fast hydrological processes, long precipitation time series with high temporal resolution are required. Due to limited availability of observed data such time series are typically obtained from stochastic models. However, most existing rainfall models are limited in their ability to conserve rainfall event statistics which are relevant for hydrological processes. Poisson rectangular pulse models are widely applied to generate long time series of alternating precipitation events durations and mean intensities as well as interstorm period durations. Multiplicative microcanonical random cascade (MRC) models are used to disaggregate precipitation time series from coarse to fine temporal

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