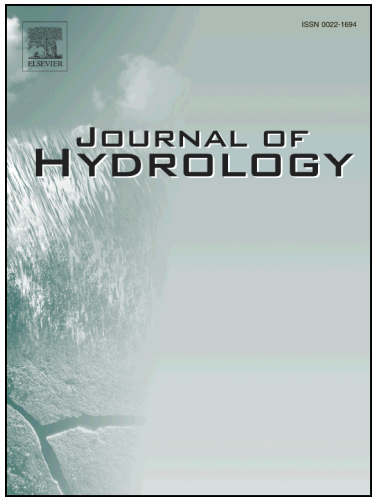

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Ina Pohle, Michael Niebisch, Hannes Müller, Sabine Schümberg, Tingting Zha, Thomas Maurer, Christoph Hinz

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

Ina Pohle[a,b,*], Michael Niebisch[a], Hannes Müller[c], Sabine Schümberg[a], Tingting Zha[a], Thomas Maurer[a], Christoph Hinz[a]

[a] *Chair of Hydrology and Water Resources Management, Brandenburg University of Technology Cottbus-Senftenberg, Siemens-Halske-Ring 8, 03046, Cottbus, Germany*
[b] *Environmental and Biochemical Sciences, The James Hutton Institute, Craigiebuckler, AB158QH, Aberdeen, UK*
[c] *Institute of Hydrology and Water Resources Management, Leibniz Universität Hannover, Appelstraße 9a, 30167, Hanover, Germany*

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

*Corresponding author
Email address: Ina.Pohle@b-tu.de, Ina.Pohle@hutton.ac.uk (Ina Pohle)