
Rainfall modelling with compound discrete EGPD

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Résumé

This study aims to develop a stochastic generator for high temporal resolution rainfall data at one location. Given the discrete nature of such data, we consider a compound Poisson process to model rainfall events. To ensure realistic modelling across the full range of rainfall intensities, from moderate to extreme, the extended generalized Pareto distribution (EGPD) is considered for the sizes of the jumps. In addition, to account for the strong temporal dependencies, inherent in rainfall data due to the underlying meteorological phenomena, we propose a discretized variation of a trawl process, called tetris process, which simply corresponds to a specific moving average process. This is a joint work with Pierre Ailliot and Carlo Gaetan.

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