

Interactive comment on “Modelling rainfall with a Bartlett–Lewis process: New developments” by Christian Onof and Li-Pen Wang

Anonymous Referee #2

Received and published: 20 September 2019

This is a well-written and tightly argued paper that makes an important contribution to the stochastic modelling of precipitation time-series. A principle area of difficulty with the Poisson process models considered is the process of parameter identification. The authors provide a commendably clear review of previous approaches before moving on to point out a hitherto unnoticed flaw in existing methods. They then provide an improved methodology, which is convincingly demonstrated (using some remarkable historical time series data) to significantly improve the ability of the models to reproduce extreme values across a range of temporal scales. This is of importance to a wide range of applications, not least rural and urban flood design. I have just one substantive comment. The paper would benefit greatly from additional material setting out the scope and extent of previous applications for this family of models. The paper is written

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for the cognoscenti, but for those not deeply familiar with the models, more context would provide helpful motivation, i.e. lines 14 -19 should be expanded. Other very minor points: Line 54 'the other issue' – would be helpful to remind the reader which of the several issues discussed to this point is meant, to aid readability. L117 I suggest 'the models are generally calibrated...' – add 'generally', it's not a universal rule that this method must be used.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2019-406>, 2019.

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