

Interactive comment on “A class of probability distributions for application to non-negative annual maxima” by Earl Bardsley

Anonymous Referee #2

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After reading this technical note I wonder why the Author did choose HESS and why He does not try to demonstrate a bit more why hydrologists or earth system scientists should be interested in His results. I think F. Serinaldi is right when he says that “proposing ‘new’ statistical results in hydrologic journals is not a good strategy to guarantee the quality of the scientific production, as there is a very good chance that professional statisticians with expertise in EVT do not comment on the paper”. I am not an expert in statistics but a user of statistic for hydrologic applications and I would have expected to get some insight on how to use these new distributions in hydrology from a paper in HESS. Personally I like the idea of non-negative extreme value distributions for the cases in which Monte Carlo simulations are needed and one does not want to generate negative flood peaks, for example. However I do not think that having

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an upper bound is in general a good idea in hydrology (see e.g. Papalexiou and Koutsoyiannis, 2006). I would suggest the Author either to submit His work to a statistical journal or to extend it in a way to make it useful for the readership of HESS, which would imply to demonstrate the applicability of the method in hydrology, for example by showing that the proposed distribution is more appropriate than the standard ones in a particular case study.

Minor comments:

- The abstract, which includes definitions and one equation, is very unusual for hydrology journals. Besides, Section 2 is a repetition of the abstract. I would suggest to shorten it.
- Figure 2: I would suggest to plot all three distributions of Figure 1 also here

Citations:

Papalexiou, S. M. and D. Koutsoyiannis (2006) A probabilistic approach to the concept of Probable Maximum Precipitation. *Advances in Geosciences*, 7, pp.51-54.

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