

Hydrol. Earth Syst. Sci. Discuss., referee comment RC1  
<https://doi.org/10.5194/hess-2021-580-RC1>, 2022  
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## **Comment on hess-2021-580**

Anonymous Referee #1

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Referee comment on "Stochastic simulation of reference rainfall scenarios for hydrological applications using a universal multi-fractal approach" by Arun Ramanathan et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-580-RC1>, 2022

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The manuscript presents a stochastic approach to generate an ensemble of reference rainfall scenarios (giving a desired rainfall amount  $P$ , rainfall duration  $D$  and return period  $T$ ). This approach is based on multi-fractal theory, which is parsimonious and easy to apply. While this research topic is generally relevant for the readership of HESS, there is still a bit of issue which needs to be addressed. Please find the attached comments. Those comments should be addressed before considering publishing this article.

Please also note the supplement to this comment:

<https://hess.copernicus.org/preprints/hess-2021-580/hess-2021-580-RC1-supplement.pdf>