

Geosci. Model Dev. Discuss., referee comment RC2  
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## Comment on gmd-2022-128

Anonymous Referee #2

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Referee comment on "stoPET v1.0: a stochastic potential evapotranspiration generator for simulation of climate change impacts" by Dagmawi Teklu Asfaw et al., Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2022-128-RC2>, 2022

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I'm revising "stoPET v1.0: A stochastic potential evapotranspiration generator for simulation of climate change impacts", the manuscript exposes the adopted practices to obtain stochastic based generation of Potential EvapoTranspiration. The proposed manuscript is well written and clearly exposed.

The obtained results can be applied in a wide range of practical applications, those applications are exposed in the "conclusion" chapter. An overview of some of the potential application of the proposed algorithm could be provided earlier in the manuscript; e.g. mentioned in the introductory part, so to introduce the point in obtaining detailed hourly series.

Fig.5 shows great alignment between stoPET and hPET but the former is derived from the latter: the agreement only shows that the mean un-biased stochastic mechanism worked as planned.

Wouldn't be be more interesting a comparison with a different stochastic source? E.g. Hargreaves computed PET with input from a stochastic weather generator (at higher computational cost)?

Incorporating future climate change in stoPET provides 3 methods to include expected changes in PET.

About method 3, adoption of linear trends for timeseries of complex variables can hardly be considered robust. In 4.1.3 when do you consider the beginning for the historical PET start and how long is it?