Hydrology and Earth System Sciences Discussions

Hydrol. Earth Syst. Sci. Discuss., referee comment RC1
https://doi.org/10.5194/hess-2021-73-RC1, 2021

Comment on hess-2021-73

Anonymous Referee #1

Referee comment on "The accuracy of temporal upscaling of instantaneous evapotranspiration to daily values with seven upscaling methods" by Zhaofei Liu, Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2021-73-RC1, 2021

This manuscript evaluates the performance of seven upscaling methods for predicting daily ET from instantaneous ET measurements and provides an analysis of the pros and cons of these methods. In general, the manuscript is well organized and well written. I only have minor suggestions as below:

1. The title seems not precise or a bit awkward, perhaps you can reformulate it a bit to something like below:

"The accuracy of temporal upscaling instantaneous evapotranspiration to daily values with seven upscaling methods"

2. In this study, the author claim this is one of the first study to do such evaluation (seven methods) at a global scale, and based on such evaluation, some advantages and disadvantages of different methods were explained/discussed. On the other hand, it is not clear how all these methods will help us to understand better the physics/processes/mechanisms behind daily ET predication at a global scale across all different climate zones;

3. The author suggested that the result of this study can help improve the accuracy of remote sensing ET products. However, there is no example/demonstration with the application of what the author claimed (e.g. Sine, EF(Re)), for producing remote sensing (RS)-based ET products. And there is also no intercomparison between such 'temporal upscaled' ET product with existing RS-based ET data.

4. Perhaps, the data script (e.g., download script / a readme file or so for how you access/download FLUXNET data [stations etc.]), and the processing script can be opened

and invite the community to engage better with this analysis, and see if further methodologies can be developed based upon your studies.

Some further minor suggestions as attached

Please also note the supplement to this comment:
https://hess.copernicus.org/preprints/hess-2021-73/hess-2021-73-RC1-supplement.pdf