

## ***Interactive comment on “Local tower-based merging of two land evaporation products” by Carlos Jiménez et al.***

**Anonymous Referee #2**

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The authors investigate the added value of merging two land ET products based on their performance with respect to tower-based ET. This is definitely an interesting topic in particular in the light of the existing large uncertainties in ET estimations.

General comments and questions:

The study is well written and provides interesting insights in the performance of the two used ET models. These seem to perform very similar and the merge of them does not provide a significant added value. I'm wondering thus if the use of other WACMOS-ET models with more diverse performance at the tower sites could be a better test case for the proposed merging procedure (instead of having two already similarly well-performing models with not much of room for improvement). Can the authors comment, why they did not include a more diverse palette of models?

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Also, how are data gaps in tower data and non-consistent temporal coverage of the towers treated? This might influence the analysis of the derived merging weights if the station sample changes over time.

Specific comments:

page 3, line 12: What about other observational data? E.g. lysimeters or catchment wide estimates could be mentioned as well here.

page 5, lines 24/25: Do you expect an impact on the merging weighs when sub-daily simulations and tower data would be considered?

page 7, line 18: Obsolete brackets between the two cited papers.

page 8, line 1: What happens if the two data sources for precipitation disagree?

page 12, line 8, "estimated over the time series of available errors": What about differences in the length of the EC time series or differences in the occurrence of data gaps between the towers? How is this taken into account in the analysis of the weights?

page 13, lines 3-5: Rephrase: "A 61-day running window was found to provide ..."

page 13, lines 3-5: Is there a minimum requirement of data availability for deriving the weight within the window?

page 13, lines 9-13: Sounds a bit confusing and not so clear (at this point of the paper at least). Try to re-formulate being a bit more specific (reasons to believe that?).

page 14, lines 14-20, "optimum product": How often is the optimum product one of the two models (i.e., weight of one)? From Fig. 5 it looks like a weight of one is never reached.

page 19, Fig. 4: The legend interferes with the figure information, please increase the y-axis range a bit.

page 19, Fig. 4 caption: Is it the optimum product you are comparing with the tower ET, not the WA-product? From page 14, I get that the optimum product is either the tower ET or one of the two models. Assuming that it's often the tower ET (judging from Fig. 5 where weights never reach one), shouldn't the RMSDs become zero? Perhaps, the relation of the optimum product and the WA-average product is not completely clear (at least to me) and might deserve some clarifications in the text.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2017-573>, 2017.

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