

Interactive comment on “Robust historical evapotranspiration trends across climate regimes” by Sanaa Hobeichi et al.

Anonymous Referee #2

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Review of “Robust historical evapotranspiration trends across climate regimes”

This paper presents a global estimate of ET including its uncertainties based on many sources of ET data. Compared to the previous version, this new version of “DOLCE” extends its coverage in time, resolution and inclusion of products. The new product is compared with earlier published ET estimates. In addition, the uncertainty estimates are evaluated. Also, historical trends in ET and their robustness is discussed. The latter results suggest a (robust) ET increases in recent years.

Overall this work seems like a useful addition to the literature. I have some detailed comments for clarification. The results and discussion section of the paper often for large parts mostly just list what is shown in the figures, but it would make it a lot more interesting to more read about what the figures teach us. In addition, please check if

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small things table contents, figure axes, etc. are introduced. Often this seems somewhat lacking.

Detailed comments

L13: why “gridded”?

L19: “After successful evaluation of the efficacy”: a “successful evaluation” does not say anything about the efficacy, so please rephrase.

L19: coverage, rather than reach?

L33: “with different scopes” is unclear in its meaning to me.

L35: “typically incorporating a range of remote sensing inputs” would benefit from some citations.

L36: “have been recognised for their potential to outperform single source datasets” can the strength of these methods be made in a more explicit statement that is more specific?

L40: time resolution (rather than step)?

L43: chemical seems redundant?

L70: physically-based

L70: which ET trends did Pan look at?

L142-147: it seems some references could be added here?

Section 2.2.4. I do not suggest to redo the analysis, but why aren’t weighing groups considered based on their physical similarity linked to ET (e.g. landcover) rather than these currently somewhat oddly chosen groups?

Table 1: indicate what a (lack of) marker means. It’s somewhat obvious but it’s still good to specify. . .

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Table 3: why are uncertainties this large for DOLCE V2?

Table 5: specify unit of the trends.

Figure 1: is this necessary to include in the main paper, or could it be supplementary materials?

Figure 2: idem

Figure 3: can more distinguishable lines styles (i.e. color, thickness etc) be used better allow interpreting this figure?

L759: reliable or robust?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2020-595>, 2020.