

**Review of the revised manuscript “Unveiling the impact of potential evapotranspiration method selection on trends in hydrological cycle components across Europe”, submitted to HESS by Vishal Thakur et al.**

*Dear Vishal Thakur and co-authors, thank you for re-submitting the revised version of your manuscript. Please find below my open comments and questions. All the best for the finalization of this study! Best wishes, Franziska Clerc-Schwarzenbach*

**General and specific comments**

In my opinion, the revised manuscript is a great improvement compared to the originally submitted version. I especially appreciate that you added additional analyses to assess the influence of the large number of temperature-based methods as well as if there is a change in the results when only significant trends are considered. Thank you for answering my concerns in such a detailed way.

Here are a few minor points that I would still like to raise:

- I think that the introduction strongly benefits from the thoughts that you added on different terms and concepts that are relevant for an evapotranspiration study. However, on lines 28-30 you state that PET is used in agriculture. I would argue (and this is also how I understand Xiang et al.) that it is actually *not* PET which is used in agriculture, but mainly ET<sub>0</sub>.
- In lines 42-46, you added interesting information on the number of temperature-based, radiation-based and combinational methods, as well as on the suitability of different methods for specific climates. If all of this comes from Lu et al. (2005), I think it would be good to make this clearer, and also to state that in the last 20 years, even more formulae were developed (see for example Valiantzas (2013), 10.1016/j.jhydrol.2013.09.005). If you used other references for these new points, can you please add them?
- Thank you for not shying any effort to change Fig. 6. I really like the result and together with the additional text about it, it is now much more easily understandable for me. Potentially, you could also add in the caption (in addition to the text) why the rows do not always add up to the number of catchments, but I also understand that the caption is already quite long, so consider this just an idea.

**Technical corrections and individual typos**

Please find below some comments and suggestions for small corrections that should be implemented to improve the quality of the text. In general, I think that the manuscript will benefit from a thorough proof-reading to smooth out any remaining errors.

Please carefully go again through the list of technical corrections that I had provided with my review. Some of these have not been corrected in the revised manuscript, I noted down some points, but this may not be complete:

- (technical correction d) I think that the sentence starting at the end of line 89 (formerly line 75) is redundant (stating the same as the preceding sentence in other words) and incomplete, please double-check and correct.
- (technical correction f) “Baier-Robertson” and “McGuinness-Bordne” are still not consistently spelled correctly (and maybe this also applies to other names, I did not check them all). Please make sure that they are all used in a correct and consistent manner, including in the tables. Similarly, also make sure that the Penman-Monteith[CO<sub>2</sub>] method is named consistently.

- (technical correction g) In Table 1, the reference that should be “Tucker et al. (2004)” is in a different format than the other references. Please double-check all references, especially those that were changed manually.

Note that the first paragraph of chapter 2.1 is there twice. The same applies for the paragraph starting on line 421 (very slight differences in the two occurrences).

Note that the figures in the supplementary material should be re-ordered so that they are referred to in increasing order in the manuscript (e.g., Figure S21 is mentioned already on line 224).

Please also double-check the correction of all the individual typos that I had listed in the original review, some are still there in the revised manuscript. There were also some new typos (for example: line 58: “canopy”, line 202: “example”, lines 480/481: brackets around references) which should be corrected.