

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2021-590

Anonymous Referee #2

Referee comment on "Pan evaporation is increased by submerged macrophytes" by
Brigitta Simon-Gáspár et al., Hydrol. Earth Syst. Sci. Discuss.,
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Anonymous Referee

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"Estimation Standard And Seeded Pan Evaporation Using Modelling Approach" by Brigitta
Simon-Gáspár et al.

General comments

The paper concerns a topic consistent with the research domain of the Special issue:

Experiments in Hydrology and Hydraulics in the HESS journal.

The authors used FAO-56 Penman-Monteith equation (FAO56-PM), multiple stepwise regression (MLR) and Kohonen self-organizing map (K-SOM) techniques to estimate daily pan evaporation (E_p) in three treatments. And in an six-season experiment. The 10 modelling approach included six measured meteorological variables were compared and evaluated. The results showed that the MLR method provided close compliance with the observed pan evaporation values, but the K-SOM method gave better estimates than the other methods.

I really appreciate the huge work made by the authors. However, I have some questions about the innovation of the research method and the purpose of this study. First, the methods of FAO-56 Penman-Monteith equation (FAO56-PM) (Allen et al., 1998), Kohonen self-organizing map (K-SOM) techniques (Kohonen, 1982) and multiple stepwise regression (MLR) are classic, but also relatively old methods. Predecessors have done a lot of research and published a lot of relevant papers on the comparison of these methods. If only a few traditional, classical methods are compared and discussed, I think that there is not enough innovation in terms of methodology to be published in HESS, and there are already many ready-made papers on comparative studies of evaporation calculation methods. In addition, the authors said that "there is little information in the literature on how submersed macrophytes affect the evaporation of a lake" in Introduction (Lines 64). Is this statement supported by the literature? (Wang, J.H. 1994. Effects of aquatic plants on water surface temperature and evaporation. *Arid Land Geography*, 17(2), 3. doi: CNKI:SUN:GHDL.0.1994-02-009).

The second main aim of this paper was to estimate daily E_p using FAO-56 Penman-Monteith (FAO56-PM), Kohonen self-70 organization map (K-SOM) and multiple stepwise linear regression (MLR) methods. Since this purpose is only the comparison and evaluation of several traditional methods, and I personally still feel that the innovation is not sufficient for HESS.

Specific Comments

- English language needs to be modified. I found several unclear sentences that make it difficult to understand the analysis and results carried out.
- The description at the beginning of the Abstract is too simple and empty, two to three sentences should be used to focus on the shortcomings of the current study and the innovation of this study.
- Some of the references in the Introduction are too old. It is suggested that the author update some relevant studies recently published.
- The font resolution in Figure 1 is too low to see the relevant text clearly. I suggest the author to redraw it.
- The numeric font in equation 2 is suggested to be Times New Roman, and the rest of the formula is the same.
- In Materials and methods, it would be better to give specific steps about the experimental design of this study, the current presentation is relatively sketchy.
- The Results and Discussion session. I found some good results from this study, but unfortunately the authors' description of these results is too brief (Both in Figures and Tables) and suggest a more specific analysis and evaluation of the results. And the

discussion was not in-depth enough and was only a brief description of the Results. It is recommended to fully evaluate and discuss the results obtained by several different methods used in this study in terms of the mechanism of influence.

- The content of the conclusion should not be a simple retelling of the results and discussion, but also a more in-depth explanation of the scientific significance and potential application value of the study, rather than the kind of formulaic statement in the last paragraph of the conclusion.
- I am not quite sure if the current hess format requires line numbers to be marked every five lines, which causes some reading difficulties, if not required by the journal format, it is recommended that authors mark all line numbers.

Please also note the supplement to this comment:

<https://hess.copernicus.org/preprints/hess-2021-590/hess-2021-590-RC2-supplement.pdf>