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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Estimation of evapotranspiration by FAO Penman–Monteith Temperature and Hargreaves–Samani models under temporal and spatial criteria. A case study in Duero Basin (Spain)" *by* Rubén Moratiel et al.

Anonymous Referee #4

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This study presents a calibration of Hargreaves evapotranspiration models. The study borrows its fundamental from numerous published studies on similar work, which present almost the same method. Although the level of novelty is not high, the paper does present an interesting analysis and is an interesting issue in the chosen problem. Thus, the paper can be considered for publication provided the following issues are addressed:

Abstract: What is PMTCUH, PMTOUH ? Authour needs to define these at its first use. The abstract should be revised. In my opinion, it is not necessary to present the values

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for performance evaluation of fitted models. If you have to show the difference in performance of fitted models, you should note to the performance evaluation of seasonal scale also between annual and seasonal scale.

Introduction: The introduction needs to sharpened. The justification of the study needs to explains how this work is different from many other similar published studies like " Pandey et al (2014) Calibration and performance verification of Hargreaves Samani equation in a humid region. Irrigation and Drainage 63(5): 659-667. DOI: 10.1002/ird.1874 and Pandey, P.K. & Pandey, V(2016) Evaluation of temperature-based Penman–Monteith (TPM) model under the humid environment Model. Earth Syst. Environ. (2016) 2: 152. https://doi.org/10.1007/s40808-016-0204-9 . In this regard, I suggest that you refer to above mentioned studies in order to improve justification of the study.

Materials and Methods The description of study area needs to shortened. The main approach of this study to improve Hargreaves model is based on calibrations of Krs coefficient. However, improvement also possible by calibrating exponent of the Eq. Justification need to explained in this regard. In evaluation of models performance either intercomparing of indices should discussed or author use composite index. The advantages of composite index is that all the selected indices were normalized between 0 and 1 to avoid the potent stimulus of any particular index. Due to this, maxima value of any index is scaled to 1 and minima value to 0 (Pandey & Pandey (2018); doi: 10.2166/wcc.2018.305).

Results & Discussion: The main problem with this section is poor discussion. I suggest author add separate discussion section to improve presentation of results. Also, if possible, add composite index as used by Pandey & Pandey (2018, doi: 10.2166/wcc.2018.305) in evapotranspiration study. Conclusion: As conclusion section is dependent on results and discussion section. In my view author first revise result and discussion section. Afterwards present only core finding in conclusion section.

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