

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2021-69

Anonymous Referee #2

Referee comment on "Bias-correcting input variables enhances forecasting of reference crop evapotranspiration" by Qichun Yang et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-69-RC2>, 2021

Comments on "Bias-correcting individual inputs prior to combined calibration leads to more skillful forecasts of reference crop evapotranspiration" by Yang et al. This study evaluated two calibration strategies for simulating reference crop evapotranspiration. The two strategies are (1) calibration directly applied to raw ETo forecast constructed with raw forecast of input variables; (2) bias-correcting input variables. The bias-correcting algorithm has been proved to be more feasible. Although this study is of significance, improvements and revision can make the study stronger and more compelling. Core of my concerns is the results presentation and discussion, many sections are superficial; the results are simply described, more insightful explanation and discussion are needed. See below for my suggestion. A moderate revision can easily address these comments. So I suggest a moderate revision. Lines 11, fully implemented. Line 27, "divergent" emphasizes completely different assumption, you can just use replace it different to ensure a general term. Line 38, physical processes of the atmosphere, it is unclear, atmospheric circulation or atmospheric wind formation, or physical processes in the atmosphere Section 3.1, 3.2, the authors described the results in the figures. However, most of those text are vague, please provide more specific (quantitative) information to support your statement. When you compare different results or method, it is better to report some statistic results (p value, r2, etc). for example, line line 223-225, you report the overprediction in Tmax, and underpredict in Tmin in different regions. If it is underprediction, what is the range of that underprediction, same for overprediction, are these different statistically significant? There are many similar issues in other sections. In the discussion section, I would be willing to see a comparison with other studies with different algorithms for the ETo simulation. Some quantitative comparison to elucidate the better performance of the new bias-correction algorithm needs to be done. I believe it will prove the reliability of the new algorithm. Line 388, feasible or reliable ETo forecasting. Line 390, short-term ETo forecasting provides highly valuable information for real-time decision making on water resource management and planning farming practices. This study proved the bias-correction approach is a feasible method for a more robust calibration of the NWP-based ETo forecasting.