

Interactive comment on “How over 100 years of climate variability may affect estimates of potential evaporation” by R. P. Bartholomeus et al.

Anonymous Referee #1

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General Comments: The authors have done a lot of work characterizing the variability in ET estimates using various calibration periods over the last century. Their overall conclusion is that using calibrated coefficients extrapolated from a short period of time under different climate conditions can lead to systematic differences between empirical and process-based models. This is not a surprising result, and I would be interested to see the results presented in a way that gives readers tangible information that allows them to make the best decision of how to model ET given limited radiation or ET measurements. I think the paper would benefit from an additional section examining the reliability of published crop coefficients and commonly used parameters for ET estimations over the period of record, and draw some general conclusions about that. At the very least, the authors should include more context for the estimated parameters

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generated in this study in terms of how they compare to already published values (they cite Feddes, 1987 and Allen, 1998 – others to look at could include Shuttleworth, 1992 or other ET factors in hydrology reference texts). In addition, a number of the figures are difficult to read – I'd suggest presenting a representative figure or few figures from some of the multiple-pane plots and explaining the differences between groups in the text.

Specific comments: Figure 2: What is the significance of the dashed lines compared to the solid lines?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 10787, 2014.

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