Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2019-111-RC2, 2019

Hydrology and Earth System Sciences
Discussions

Interactive comment on "Global catchment modelling using World-Wide HYPE (WWH), open data and stepwise parameter estimation" *by* Berit Arheimer et al.

Anonymous Referee #2

Received and published: 25 June 2019

Overall opinion:

Overall, this is a useful synthesis to all those who want to know the state of development of the HYPE model. The only problem I see is in the overly emphatic statements : I have no problem with publishing modest modelling results, or even complete model failures, provided modest results are called modest, failures are named failures. A mean KGE of 0.4 reflects a poor fit, but it may be the most that such a worldwide approach can bring. At this scale, we lack references. In the "model usefulness" section especially you should try to be more modest. Start by stating that in many areas HYPE should still be considered as a scientific tool, and that it cannot be useful

Printer-friendly version

Discussion paper

to managers because of its poor performances. Only for a small percentage (10% or 20 % ?), it is usable by a manager. Don't forget that managers have always high model efficiency expectations.

Technical suggestions:

1. To be able to judge of the fit quality, we would have needed something like a classical (let's say HBV) lumped hydrological model applied as reference, in calibration mode, or even in ungagged mode with a single parameter set for the entire globe.

2. I am not convinced by your introduction much too long, not really informative, a lot of commonplace statements. You cite all the "politically correct" papers of the moment, but you could go straight to the point: you are a recognized group with a first worldwide application of your model. That's all.

3. Using KGE is OK, but I would suggest to use a bounded version (between -1 and 1, see Mathevet et al. 2006) because we are not interested by large negative values.

References

Mathevet, T., Michel, C., Andréassian, V. & Perrin, C., 2006. A bounded version of the Nash-Sutcliffe criterion for better model assessment on large sets of basins. IAHS Red Books Series n°307, pp. 211-219.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2019-111, 2019.

Printer-friendly version

Discussion paper