

Excellent paper - extremely useful work

Anonymous Referee #1

Referee comment on "CAMELS-AUS: hydrometeorological time series and landscape attributes for 222 catchments in Australia" by Keirnan J. A. Fowler et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2020-228-RC1>, 2021

I only see praises to formulate concerning this paper. Congratulations.

A few very minor propositions:

- in the abstract, you write "This dataset, the first of its kind in Australia, allows users..." : the "first of its kind in Australia" could be contested, it may not be useful here.
- l. 51 "other territories held by the Australian nation.": this seems almost a poetical-political statement... why not writing "other Australian territories"
- section 2.1 : I wonder whether it would be appropriate to also mention one originality of Australian hydrology: the presence of a large number of catchments with low average rainfall yield (am I right? That's the opinion I have at least, but I may be wrong). And there would be in my opinion a great graph to add: plot the 222 catchments in the hydrological ("pseudo-Budyko") space (Q/P vs P/E is my favorite), with the "physical" limits and add the catchments from the existing CAMELS datasets.
- section 2.1: insist on the fact that only the occurrence of long-lasting droughts can allow to test hypotheses on the memory of hydrological systems.
- section 2.3: may be mention how the issue of time zones has been dealt with?
- l. 261: I don't understand the problem with defining the uncertainty of zero flows... it seems to me that it is clearly 0. Even if there is a discontinuity when defining the uncertainty in relative terms (but not in absolute terms)
- list of attributes: I know that no list can be exhaustive. But there is a long-term seasonality index that I like very much, that addresses the dephasing between Potential Evaporation and Precipitation (the lambda in the paper of de Lavenne and Andréassian in 2018). But I can understand that you may not have any energy left after so much computation...

References

de Lavenne, A. & V. Andréassian. 2018. Impact of climate seasonality on catchment yield: a parameterization for commonly-used water balance formulas. *Journal of Hydrology*, 558: 266-274, <https://doi.org/10.1016/j.jhydrol.2018.01.009>