Hydrology and Earth System Sciences Discussions

Hydrol. Earth Syst. Sci. Discuss., referee comment RC1
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# Comment on hess-2022-75

Anonymous Referee #1

Referee comment on "Evaporation loss estimation of the river-lake continuum of arid inland river: Evidence from stable isotopes" by Guofeng Zhu et al., Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2022-75-RC1, 2022

Dear authors of "Evaporation loss estimation of river-lake continuum of arid inland river: Evidence from stable isotopes", I had the pleasure to read your paper and in the following I provide some comments and suggestions aimed at improving your paper in a potential revision. I think that your paper has potential to advance the application and hydrological assessments using stable isotope tracing techniques to quantitatively estimate the evaporation loss from a flowing river system in the Shiyang River Basin, Northwest China. In this manuscript it is a key result that the evaporative loss of storage reservoirs (lakes, dams) and flowing river is calculated separately, which clarifies the priorities of future water management in arid and semi-arid regions and also would be a good addition to the field of water budgets in arid and semi-arid regions. Having said that, I have some suggestions you could consider incorporating into a revised paper:

Major comments:

- Section 3.3: I would recommend adding more information on the calculations performed using the Hydrocalculator. I further encourage the authors to add a table showing the input parameters used for each section and explain in the main text how these values have been derived.
- Section 5.1: The author should clarify the specific estimation error between δD and $\delta^{18}O$. More evidence/calculations should be provided in terms of the errors.
- Section 5.2.3: It's great to run sensitivity tests of the calculated evaporation loss to the model input variables. However, the authors only analyzed the sensitivity of temperature, humidity, outflow water and precipitation. Please add the sensitivity analysis of inflow water to the model.
- The paper should also be thoroughly edited for language, as I detected many odd wordings and grammatical errors. Some sentences are not clear and sometimes convey incorrect and confusing messages for readers .

Please also note the supplement to this comment:
https://hess.copernicus.org/preprints/hess-2022-75/hess-2022-75-RC1-supplement.pdf