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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Unraveling the hydrological budget of isolated and seasonally contrasted sub-tropical lakes" *by* Chloé Poulin et al.

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The authors present a study where they use stable water isotopes to estimate the evaporation from Lake Chad. Although the applied method is appropriate, I miss the point why stable isotopes are used. For determining in and outflows of a lake I would think simple discharge and water level measurements would work too. And the latter, uses much less assumptions then the isotope method. Why do the authors use stable water isotopes? I assume there is a valid reason, however it's not clearly stated in the manuscript. Maybe it's related to my second concern on the paper: what is the objective? The lack of a clear objective, causes that it seems the paper is 'all over the

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place' and is difficult to follow and understand. It's about determining in- and outflow. It's about testing an isotope method, and about an attempt to say something about the effect of vegetation. Therefore, I recommend to rewrite the manuscript in such way that it follows the structure: research question => objective => method =>result => discussion => conclusion; and try to put more focus in the manuscript. Lastly, the English language is sometimes also not correctly used. I recommend to ask a native speaker to check the manuscript.

Specific comments
-P1 L15: abbreviations E/I are not explained
-P5 L7: these values are average values?
-P5 L12: in semi-arid zoneS
-P5 L22: remove space after 2015
-P5 L24: add permille symbols
-P5 L30,31,32: remove space before : and .
-P6 L10: "we think that..". Things that you think, should not be in the results section, but belong to the discussion section
- Section 5.1: should be in the Methodology section.
-P6 L30: why can assume steady-state conditions of the lake? Please elaborate.
-P7 L11-13: any reference for this statement? To me this seems to be a bold statement since d_a are relatively light isotopes, while precipitation is in the beginning more heavy.
-P7 L12: precipitations => precipitation
-P7 L30: what is meant by a closed-system?
-P12 L24: I think you refer to the wrong paper. This should be the correct one.
Coenders-Gerrits, A.M.J., Van der Ent, R.J., Bogaard, T.A., Wang-Erlandsson, L., Hrachowitz, M., and Savenije, H.H.G. (2014): Uncertainties in transpiration estimates, Nature, 506, E1-E2.
-P29 fig 9c: unit of precipitation is mm/month.

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