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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Modeling Lake Titicaca Daily and Monthly Evaporation" *by* Ramiro Pillco Zolá et al.

Anonymous Referee #2

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The authors present a study on assessing lake evaporation for Lake Titicaca. They compare different methods at the monthly time scale and then use the most successful methods to apply at the daily time scale. Honestly, although the paper is in principal OK (methodologically), I don't see much novelty in the paper. The authors apply different existing methods to a location that is measured before and even don't use any new method of analysing their results. So I don't see much added value in this study. For a journal like HESS, this should be the case.

specific comments:
-P2L13: why are daily observations/estimates necessary? It's not clear from the introduction. Please elaborate.

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Discussion paper

- after reading the introduction, I understand that Lake Titicaca is studied before with different methods. So why redo the experiment? Do you have any indication that the existing estimates are not OK?
-P6L16: So you don't trust the precipitation data on shore, so why don't you use e.g., remote sensing data? The lake is big enough, I would say.
-P8L27: disadvantage of this method is that a and b are empirical numbers. So you can question if these values found in Russia can be used in Lake Titicaca.
-P8eq11: the surface area A is a function of depth. I assume that the biggest error are caused by this.
-P8L20: I don't understand this sentence. Why is daily evaporation not important for the water balance? you can apply the water balance at any time scale you want.
-P14section 5.1: be consistent with the naming of your methods. Now the method 'carmouze' is used, while before it was named mass transfer method. This is confusing for the reader.
-P14fig 5: how can you compare evaporation data of two different years? Would be weird if they were the same.
-P16L10: I think the biggest error is not the water level, but the associated wrong estimation of the surface area...
-P19L6:?? are you keeping the bowen ratio constant of do you change it day by day? Confusing sentence. Please rewrite.

minor/technical:
-P1L19: ".. using THE heat balance.."
-P1L22: unit of annual evaporation is mm/YEAR
-P3L6,7,8,9,10,11: '-1' should be superscript
-P3L12: unit of annual evaporation is mm/YEAR
-P5L16-18: unit of annual evaporation is mm/YEAR
-P5L24-25: celsius degree symbol is not ok
-P7section3.2.1: add units to all variables.

-P8eq6: what is P? not defined.
-P8L25-26: Please correct this sentence. It's double.
-P8L27: please specify units and avoid 'with units as above".
-P9section 3.2.3: Please provide units and don't use "With units as above".
-P14L5: remove 'a total evaporation of 3400 mm, corresponding to". It's not important.
-P14L12:unit of annual evaporation is mm/YEAR
-P16L9:unit of annual evaporation is mm/YEAR

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