

Interactive comment on “Contribution of understory evaporation in a tropical wet forest” by C. D. Jiménez-Rodríguez et al.

Anonymous Referee #1

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The present manuscript entitled "Contribution of understory evaporation in a tropical wet forest" to estimate the total evaporation flux and differentiate the contribution among canopy layers of a tropical wet forest in Costa Rica. The authors found distinct water fluxes through the vertical canopy gradient, along with different plants using water from different sources. The manuscript is really well written and the sampling was quite robust (sensors and plot sizes), and the data collected will serve as hydrological data that can be input into TBMs. However, I have three major issues that I would appreciate the authors tackling/explaining before this paper is published in this present journal or elsewhere: - There needs to be an explanation to why measurements were only done for 2 months and only in the dry season. Considering that most of the year is the wet season (ie., canopies are mostly wet), why choose only the dry season (an

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outlier in comparison to the rest of the year)? - This study has a striking resemblance to Loescher et al. (2003 - "Energy dynamics and modeled evapotranspiration from a wet tropical forest in Costa Rica") paper, which also discussed canopy partitioning of water fluxes and conducted at the La Selva Research Station (like the present study). Your study is only set apart from Loescher's due to the isotope tracing portion/water source, and that Loescher's paper modeled ET. I suggest there being a bolder statement in the introduction stating why your study is unique and important (or adds to) in comparison to Loescher's. - Still related to the previous topic, your objectives should state your main questions/hypotheses much clearer. I felt like the findings were more descriptive than it was answering any question. Why not include an objectives to differentiate different plant functional groups and why their possible water source might be relevant to hydrological studies. Example: if there are more palms, and palms use more rain water; thus, if precipitation is limited in the future, would that affect palm distribution/growth/dispersal? I think this paper needs bolder statements and more impactful implications. You can see that the "conclusions" section is only a summary of the results, which in reality should be highlighting the importance of the findings being presented.

In summary, it doesn't matter how well done the sampling and writing was, if the message is not clear enough (question and implications), and if there isn't a better acknowledgement and distinction of your work with other work done at La Selva. Please see my attached document for more minor comments.

Please also note the supplement to this comment:

<https://www.hydrol-earth-syst-sci-discuss.net/hess-2019-566/hess-2019-566-RC1-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2019-566>, 2019.

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