

Hydrol. Earth Syst. Sci. Discuss.,
<https://doi.org/10.5194/hess-2017-278-AC1>, 2017

Interactive comment on “Scaling properties reveal regulation of river flows in the Amazon through a “forest reservoir”” by Juan F. Salazar et al.

Juan F. Salazar et al.
juan.salazar@udea.edu.co

Comment:

Editor Decision: Publish subject to minor revisions (review by editor) (31 Dec 2017) by

Patricia Saco

Comments to the Author:

Dear authors,

I believe that the revised manuscript has greatly benefited from the review process. The paper will be ready for publication after answering and clarifying the discussion in response to the minor comment of reviewer #1.

Best Regards,
Patricia Saco

Response:

Thank you very much. We gratefully acknowledge that yours and the reviewer's comments have helped us to improve our manuscript. Below we answer the reviewers' comments.

Comment:

Anonymous Referee #4

For final publication, the manuscript should be accepted as is.

I have looked at the reviews and I think the authors have answered the reviewer's comments adequately. The manuscript is a meaningful contribution for the audience of HESS.

Response:

Thank you very much for your comments and positive recommendation.

Comment:

Anonymous Referee #3

In my opinion, the revised version of the manuscript benefitted a lot from previous referees' comments. I have a minor point which require a bit clarification.

Response:

Thank you very much for your comments and positive recommendation. We agree that the Editor's and reviewers' comment have helped us to improve our manuscript, and have included that in the acknowledgements.

I appreciate the authors' approach to relate discharge (Q) with Leaf Area (LA) which can be more realistic than Area, A due to its influence on evapotranspiration, infiltration etc. Again, as authors stated (P10.L9-10) that their intention is not to use LA as a scale parameter in any river basin, moreover, using a scale parameter in the Amazon. However, I may miss the point in the text here! My understanding, based on Figures S1-S6, replacing the LA term instead of A term in the power-law scale does not always improve R² of the relationship. Moreover using the LA term in scaling may deteriorate or have no impact on the R² terms of the relationships. A bit more clarification is required at this point.

Response:

You are right that using LA as the scale parameter does not always improve R² in the empirical power laws (as compared to the case of using A). Our intention is not to show that LA improves such statistics (values of R² for the power laws relating Q and A are generally high, as expected), but to discuss that using LA is possible and meaningful. Importantly, the main results of our study are statistically significant and consistent among the two scaling models. We have clarified this in the text (P10.L11-12): "Although using LA as the scale parameter does not always improve R² in the scaling power laws (Supplementary Figs. S1--S6), the main results of our study are statistically significant and consistent among the two scaling models:...":

MINOR POINTS:

P16. L6. Subject-verb agreement. ...stomatal aperture tends to....

SuppP1.L7-8. The locations of the 85 gauges ARE indicated.....

SuppP1.L9. The lengths of the records

Response:

All minor points were corrected.