

Interactive comment on “Informing a hydrological model of the Ogooué with multi-mission remote sensing data” by Cecile M. M. Kittel et al.

Cecile M. M. Kittel et al.

ceki@env.dtu.dk

Received and published: 16 October 2017

Response to the review of Anonymous Referee #2, posted 13/10/2017

The paper investigated the use of multi-mission remote sensing data to force, calibrate and validate a lumped conceptual rainfall-runoff model on an ungauged Ogooué river basin in Africa. The paper is clear and well written. I enjoyed to read this study because is well thought out and organized. The Figures are appropriated even if I would prefer bigger (especially Figure 3, 6 and 7). I recommend the publication of the paper after minor changes below specified.

REPLY: We thank the referee for the feedback and comments on the article. We will review the size of the mentioned figures in the final version.

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Some references are not properly assigned to the concept. An example is the paper of Berry et al. (2012) mentioned at P1 Line24 and P2 Line 13 to underline the decline of in-situ gauging networks. I think different papers can replace this citation [1, 2, 3]. Please check also the reference Schumann and Domeneghetti (2016) at P25 Line 26.

REPLY: We thank the referee for pointing this out and for the suggestions. We agree that more appropriate references should be cited at the mentioned places.

Plan for revision: Update citations and make sure there is consistency between reference and statement throughout the paper.

Plots a, b, c of Figure 2 are not mentioned and commented in the text. Please description. Moreover, P6 Line 4 “(Figure 2, c and d)” should be replaced with “(Figure 2, d and e)”.

REPLY: We thank the referee for noticing this, indeed a reference to the subfigures is missing and the referee is absolutely right about the cross-reference - it will be updated.

Plan for revision: The subfigures will be referenced P6 Line 3: “The spatial and temporal distribution of rainfall is relatively similar (Figure 2, a and b), however (...)”

P19 Line 2: “. . . and simulated the two models in the two basin halves”. What does the authors mean with “two models”?

REPLY: The “two models” refer to the two versions forced with the two different remote sensing precipitation products, i.e. the FEWS-RFE forced model and the TRMM forced model.

Plan for revision: The sentence will be clarified to avoid confusion.

Table 4: in the caption parenthesis are mentioned but they are not present in the table. Please correct.

REPLY: We thank the referee for pointing this out.

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Plan for revision: The numbers will be added to the table along with a reference to Figure 1.

Table 7: the acronym MD is not specified in the text or in the caption.

Plan for revision: The acronym (MD, Mean Deviation) will be specified in the caption.

References: [1] C. Vörösmarty, A. Askew, W. Grabs, R. G. Barry, C. Birkett, P. Döll, B. Goodison, A. Hall, R. Jenne, L. Kitaev, J. Landwehr, M. Keeler, G. Leavesley, J. Schaake, K. Strzepek, S. S. Sundarvel, K. Takeuchi and F. Webster, "Global water data: A newly endangered species," *Eos Trans AGU*, vol. 82, no. 5, pp. 54–58, Jan. 2001. [2] N. Sneeuw, C. Lorenz, B. Devaraju, M. J. Tourian, J. Rieger, H. Kunstmann and A. Bárdossy, "Estimating runoff using hydro-geodetic approaches," *Surv. Geophys.*, vol. 35, no. 6, pp. 1333–1359, 2014. [3] D. M. Hannah, S. Demuth, H. A. J. van Lanen, U. Looser, C. Prudhomme, G. Rees, K. Stahl and L. M., Tallaksen, "Large- Δ Rescale river flow archives: importance, current \mathbb{G} status and future needs," *Hydrol Process.*, vol. 25, no. 7, pp. 1191–1200, Mar. 2011.

Interactive comment on *Hydrol. Earth Syst. Sci. Discuss.*, <https://doi.org/10.5194/hess-2017-549>, 2017.

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