

***Interactive comment on* “Constraining model parameters on remotely sensed evaporation: justification for distribution in ungauged basins?” by H. C. Winsemius et al.**

H. C. Winsemius et al.

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The discussion of our manuscript has been very interesting in our opinion and many points brought forward by the referees will lead to a considerable improvement of our manuscript. We are glad that the editor, dr. Laio, has ensured an efficient discussion procedure, which results in a fast communication to the scientific public. For completeness, we have added a list of the most important changes and improvements that we propose for the final manuscript below. Minor changes such as misspellings and small points of comment have been omitted.

1. The abstract is somewhat lengthy. We will omit some issues about the method-S1415

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- ology and applicability of the study.
2. We have chosen an ungauged catchment as a study area. We would like to explain a bit more of the background, why we chose an ungauged instead of a gauged catchment to employ this technique as we replied to referee Laguardia. This will be done in section: study area description.
 3. We will change the area description to make it more systematic. We will add a line about the temporal distribution of rainfall which is indeed crucial for the hydro-climatology of the Luangwa river basin.
 4. Some more details will be added to the model description which was suggested by referee Laguardia and referee 2. We will add a table which describes all parameters, symbols, their physical meaning, units and prior uniform ranges. Furthermore we will add a paragraph about the model input, rainfall and potential evaporation.
 5. The top-right box of Fig. 4 will be discussed. It reveals a clear bi-modal distribution that referees would like us to discuss.
 6. An important issue is the possibility of overestimation of evaporation by SEBAL over forested areas, which was brought forward by referees Laguardia and Immerzeel. We will address this discussion by showing the sensitivity of the posterior parameter distribution to bias. This experiment will be done on a forested or highland model unit and results will be presented in a separate figure and discussed in a paragraph in the discussion section.
 7. Fig. 5 shows examples of well-performing parameter sets. We will add a table which describes the parameter sets that generated these model outputs.

A careful language check will be done and finally we will adjust some of the figures according to the suggestions of the reviewers. The meaning of the data sources in Fig.

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1 will be described more elaborately in the final manuscript, Fig. 3 will be splitted in 2 and the label of Fig. 4, x-axis on the right side will be corrected (L will become l_p).

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