

*Review for Regional modeling of vegetation and long term runoff for Mesoamerica by P. Imbach, L. Molina, B. Locatelli, O. Roupsard, P. Ciais, L. Corrales, and G. Mahé*

The paper definitely raises a lot of scientific interests, though it tried to discuss many aspect of land surface modelling that could be split in more than one manuscript. It addresses well the issue of regional mapping of run-off, evaporation and Leaf Area Index. It established a comprehensive ancillary and forcing datasets which are crucial for land surface modelling.

Then the model was assessed against different parameters sensitivities and precipitation forcing uncertainties. The final results were shown to be satisfactory at the regional level.

Taking into account the following few comments I would highly recommend publication of the paper:

- Precipitations is validated against outputs of run-off , it would be useful to check precipitation products against independents observations (not those used in the interpolation process). This might give more insight on the model/forcing errors.
- According to the precipitation regime(and vegetation), the studied area is divided in two regions, the study could be done separately for each of those regions. (though the author has done few analysis on that directions, I think it should be more explicit).
- A more critical opinion on the acceptable level of run-off results uncertainty (42%) according to the needed use (climate change/water resources management..).

Besides that, the manuscript is overall well written; and for the sake of completeness an overview of the MAPSS model equations is needed (could be annexed).

I am not sure if it is a pdf conversion problem but the titles/sub-titles, the “i” is always written as “l”