Interactive comment on "Uncertainty of gridded precipitation and temperature reference datasets in climate change impact studies" *by* Mostafa Tarek et al.

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Received and published: 28 October 2020

I found this study really informative about the issues related to the choice of "observed" rainfall for hydrological impact studies of climate change.

However, the regionalization approach considered here is barely described in section 3.2, when the results for 795 stations out of 1145 rely on this regionalization procedure. I am not aware of other studies attempting to regionalize the model parameters of the GR4J or HMETS models at the scale of Africa, so the results of this regionalization procedure surely deserve more than one sentence (line 202). In fact, I really believe this type of regional analysis would requires a study on its own. What is the efficiency of

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the regionalization methods tested in a cross-validation framework? Beside the spatial proximity, how are the "physical similarity" and the "multiple-linear regression" methods implemented? what are the predictors, since the authors only mention watershed delineation in the manuscript?

Another aspect is the presence of dams and reservoirs. Many African rivers are regulated and no mention is given in the data section 2.2.3 if the selected rivers are regulated or not. We recently released a large dataset or river discharge in Africa (https://doi.org/10.23708/LXGXQ9) and from the metadata it can be seen that about one third of the basins are regulated. It could explain the bad modelling results for some basins, since the hydrological models are not validated against independent data in the present study (line 182). It is likely that the modelling results with different satellite products can be impacted by river regulation in some basins.

Finally, I am a bit surprised by the figures 5, 6 and 8, you have river runoff over the Sahara Desert?