

Weather Clim. Dynam. Discuss., author comment AC1
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Reply on EC1

Koffi Worou et al.

Author comment on "Future changes in the mean and variability of extreme rainfall indices over the Guinea coast and role of the Atlantic equatorial mode" by Koffi Worou et al.,
Weather Clim. Dynam. Discuss., <https://doi.org/10.5194/wcd-2022-53-AC1>, 2022

Dear Editor,

I would like to thank you for your advice in thinking in a strategic way before preparing a revised version of our manuscript. Following the suggestions of the reviewers, here are the main points we propose to include in this revised version:

- We will reduce the number of extreme rainfall indices.
- We will use several daily rainfall observational datasets as suggested by the two reviewers to evaluate the performance of the different GCMs. Particular attention will be given to the annual cycle of the extreme indices, to take into account all the seasons of the year.
- We will add additional groups of models according to their skills in representing some aspects of the rainfall over the Guinea Coast, as well as their ability to represent the anomalous patterns related to the Atlantic equatorial mode phases.
- We will motivate and improve the methodological aspects of detrending and computing the Atlantic equatorial mode index from monthly sea surface temperature as suggested by reviewer 2.
- We will evaluate the sensitivity of our conclusions to the threshold of 1 mm used to define a wet day in our analysis.
- We will also modify the structure of the introduction by merging some points as instructed by the reviewers. We will also introduce earlier the Atlantic equatorial mode of variability and its characteristic frequency/timescale. We will also highlight the novelty of our study, which was not clear enough as mentioned in the community comment by Paul-Arthur Monerie. All the other sections (results, summary, and conclusion) will also be improved, following the detailed comments received.

The role of the anthropogenic aerosols in forcing the rainfall over the Sahel, as well as the observed trends in tropical Atlantic sea surface temperature will be mentioned in the introduction, but we consider that the analyses of these aspects are out of the scope of our study.

We would be happy to know if those suggestions are fine for you. Moreover, I am in the last stages of my Ph.D. thesis, with my private defense planned for January 2023. Therefore, I would like to ask for an extension of at least 6 additional weeks to complete the review of the article. The analyses needed to complete the review of the article will not take a lot of time, as I already have all the necessary material. However, the

reorganization and writing of the main manuscript will take more time, together with the finalization of my Ph.D. manuscript.

On behalf of all co-authors, thank you in advance.

Sincerely,

Koffi Worou