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Reply on RC1

Haowen Yue et al.

Author comment on "Performance of the Global Forecast System's Medium-Range Precipitation Forecasts in the Niger River Basin Using Multiple Satellite-Based Products" by Haowen Yue et al., Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2021-250-AC1, 2021

We acknowledge the importance of comparing the performance of raw forecasts with calibrated GFS forecasts. However, this would require developing new appropriate methodologies, which is outside the scope of this study. We will add a statement indicating the need for developing such a methodology, and suggest potential methodologies that could be explored.

As far as the purpose of evaluating the performance of different datasets is concerned, we will add a clarifying statement in the manuscript. Just briefly, the agreement between the reference (IMERG Final) and CHIRPS would indicate that the IMERG Final estimates are robust. Comparison of the performance of IMERG Early with the performance of GFS would indicate to what extent the IMER Early products could be used for calibration of GFS forecasts.

We will remove the quoted statement, "The use of IMERG Early to calibrate GFS would improve GFS in terms of correlation and variability, but not in terms of bias", as it does not convey adequate information.

We will replace the term 'uncertainty' with 'performance'.

We found one paper that examines the bias of GFS at high rain rates. The results are similar to ours. We will cite this paper. However, evaluation of the different error sources of GFS forecasts is outside the scope of this study, as our approach focuses on evaluation of total GFS performance (lumping together all error sources) due to limitations in our ground reference data.

We agree that it is not meaningful to present the climatological bias correction results as they do not improve performance. Hence, we intend to remove the climatological bias correction from our evaluation.

There are GFS evaluation studies in other regions of the world, albeit limited. We will add the findings of these studies in the Introduction Section.

We will fix all the minor comments pointed out.