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Interactive comment on "Evaluation of global seismicity along Northern and Southern hemispheres" *by* Olaide Sakiru Hammed et al.

Anonymous Referee #1

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Dear Dr Kamer, Thank you very much for your comment, however what is really unfortunate is that we need to argue for or against already published (and peer-reviewed) articles, while our goal here is to provide feedback to the authors that submitted an article for review. Nevertheless, a fruitful discussion and exchange of scientific opinions on observations and published results is always welcome in order to investigate deeper (and objectively) what new (or old in that particular case) approaches can offer or probably have missed. Leptokaropoulos et al. (2018) use synthetic datasets in order to investigate biases, meaning that even a biased estimator (as you suggest) is subjected to investigation as well. Nonetheless, as shown in table 2, the selected estimator is not biased at all (giving values best=0.99 and best=1.00 DM=0.1, while b=1.00,), meaning that within the constraints of the given study it is pretty accurate.

The introduction of DM/2 term in Aki (1965) maximum likelihood estimator is a widely used b-value estimation technique and its efficiency has been also verified by many published papers (e.g. Marzocchi et al. 2019 and references therein), stating that magnitude binning introduces significant b-value biases for DM>0.25, while being negligible for DM=0.1. In order to guide the authors, I would suggest them to dig deeper into bibliography and consider all reviews that have been provided here, in order to improve their study in the best possible way given the current knowledge background.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2020-128, 2020.