

Review of: “Investigating the Impacts of Saharan Dust on Tropical Deep Convection Using Spectral Bin Microphysics” by Matthew Gibbons, Qilong Min and Jiwen Fan

The revised manuscript is organized and written in a better and clearer way. In addition, the necessary details about the methodology were added. I have additional comments and suggestions for the authors.

Specific comments

I suggest to shorten the abstract and to focus only on the main conclusions here.

P3 L15: the increased evaporation of the smaller cloud droplet at the cloud periphery under polluted conditions can also increase the mixing between the cloud and the environment.

P14 L5: is it the same magnitude of forcing you get in the model results?

Technical comments

P2L12 (and other places): I suggest to be consistent and use “DCC” for “deep convective clouds” in all places.

P6 L19: at this point you still didn’t mention the use of a nested grid with 4 domains so the reader don’t know what does “the entire 4th domain” is referring to.

P10 L30: what is the scale of the exponential decrease in aerosol concentration with height?

P11 L2: you are talking here about wind shear but present values of wind speed.

P12 L28: “DCC cloud”, you can delete the second “cloud”.

P14 L23: correct: “From model hours 20 onwards, **The**...”

P19 L12 and P19 L25: change number to concentration – aggregation is sensitive to concentration and not to absolute number of partials.

P23 L14: suggest to add “(SBM)” after “spectral-bin microphysical”

I noted that you are referring to Fig. 6 only at the last paragraph of the manuscript. Isn't it appropriate to refer to it at the end of P15 or beginning of P16?

Figures: correct cm^{-3} to cm^{-3} , L^{-1} to L^{-1} and so on.