

Interactive comment on “Statistical characteristics of raindrop size distribution over Western Ghats of India: wet versus dry spells of Indian Summer Monsoon” by Uriya Veerendra Murali Krishna et al.

Anonymous Referee #2

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Title: Statistical characteristics of raindrop size distribution over Western Ghats of India: wet versus dry spells of Indian Summer Monsoon

Overall Comments: This manuscript presents a detailed analysis of the raindrop size distribution (DSD) during wet and dry spells of the Indian Summer Monsoon over Western Ghats of India. The DSD data are collected from a Joss-Waldvogel disdrometer during June–September of 2012–2015. DSD characteristics, including the diurnal variation and DSD spectra at different rain rates, as well as the gamma distribution parameters in different types of rainfall (i.e., stratiform vs convective) are summarized.

Overall, this paper is easy to follow. However, it is still not clear what the authors have

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addressed in addition to showing the DSD characteristics. Further discussions are required to elaborate the physical reasoning in this analysis.

Specific Comments:

First of all, I do not really see anything new in this manuscript. The analysis methods are rather conventional, and the findings are not well highlighted. The authors should elaborate more on the motivation and novelty of this study. More importantly, the authors should provide sufficient discussion and explanation about the DSD characteristics indicated in the observations.

In addition, I have serious concerns about using single point data to resolve the orographic enhancement. Justification is required from this perspective.

I am not convinced by the interpretation of the orographic gradients using GPM products. Also, the authors should incorporate the uncertainties in GPM retrievals. In fact, I do not really think this manuscript will have significant impact without including more in-situ data.

The authors have included analyses and figures from many perspectives. But, none of them has been detailed in a very quantitative manner. In fact, the reviewer was not even clear about what problems the authors are trying to address except the detailed illustration of DSD characteristics. Significant revisions are requested to highlight the scientific merits.

Anyway, the authors started from an interesting point about orographic precipitation. But I did not see sufficient investigation on this aspect.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2019-832>, 2019.

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