

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 #1

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Manuscript is well organised and brings out very good results and can be published in this journal. However, the paper can be accepted after incorporating appropriately the following points suggested.

Recommendation: Minor revisions needed.

Comments:

1. Being a DSD study and considering its application, authors are suggested to add more references on the studies of DSD for the Indian region in the introduction or at discussion part. This will also clarify clearly the gap in this area of research and add uniqueness to this study. There are many more studies by Harikumar et al., Kiran

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Kumar et al., Reddy and Kozhu etc and others for Indian region.

2. Add the reference Sasikumar et al. (2007) in the JESS, which is so important to be referred. Because the rain rate distribution is important and it was found out by them that Weibull distribution fits well for the rain rate occurrence. And say about the presence of low intense rain is more. So, the DSD against such low rain rates are to be looked into while the authors explain the results and at least the readers will keep that important aspect in their mind.

3. Equations 1 to 4 are not to be shown here. There are many papers from India already given these equations in those. You may cite those papers and refer.

4. Altitudinal variation of DSD and what happens as rain falls down to be just mentioned in the study for our region. Below reference will help

R. Harikumar, V. Sasi Kumar and S. Sampath, 'Altitudinal and temporal Evolution of Rain Drop Size Distribution observed over a tropical station using a K-Band Radar', International J. Remote Sensing, 33 (20), 3286-3300, 2012, DOI: 10.1080/01431161.2010.549853.

R. Harikumar, S. Sampath and V. Sasi Kumar, 'An Empirical Model for the Variation of Rain Drop Size Distribution with Rain Rate at a few Locations in Southern India', Adv. in Space Research, 43, 837-844, 2008, DOI: 10.1016/j.asr.2008.11.001.

5. Separation in to stratiform and convective is to be explained in detail. It should be connected to the literature. There are many methodologies for that. The studies in this regard in this region to be cited and referred at least in the introduction and to be connected to it. And it should justify the sanctity of the methodology authors applied in this study. Following paper explains that in detail for tropical region/India. R. Harikumar, 'Discernment of near-oceanic precipitating clouds into convective or stratiform based on Z-R model over an Asian monsoon tropical site', Meteorology and Atmospheric Physics, 2019, <https://doi.org/10.1007/s00703-019-00696-3> =====

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-1011>, 2020.

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