Anonymous Referee #1

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.

General Comment *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.

Response **We are indebted to the reviewer for valuable and thoughtful comments on the manuscript. We much appreciate the reviewer's time and efforts during the evaluation of the manuscript. We went through all the referee comments and suggestions and implemented the same in the revised manuscript. Point-to-point clarifications for the referee's comments and how we have addressed each recommendation is listed below. The manuscript is also altered by considering the other reviewer's comments.**

Specific Comments

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

Response **Thanks. Previous studies on DSD variability over Indian region are added in the revised manuscript.**

Comment#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.*

Response **The reference Sasikumar et al. (2007) is added.**

Comment#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.*

Response **Reviewer's suggestion is implemented.**

Comment#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.

Response **Thanks for the suggestion. Now, the importance of altitudinal variation of DSD is added in the introduction with appropriate references.**

Comment#5 *Separation in to startiform 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*

Response **Thanks.**

Several rain classification schemes proposed in the literature using different instruments, like, disdrometer, radar, profiler (Bringi et al., 2003; Thompson et al., 2015; Krishna et al., 2016; Das et al., 2017; Dolan et al., 2018; Harikumar et al., 2019). In this study, the rainfall at the ground is classified as stratiform and convective based on Bringi et al. (2003) criterion. Even though several other classification schemes available in the literature, it is the most widely used classification criterion for stratiform and convective rainfall. For instance, several past and recent studies (Marzano et al., 2010; Chen et al., 2013; Tnag et al., 2014; Wen et al., 2016; Suh et al., 2016; Wu and Liu, 2017; Seela et al., 2017; 2018) used Bringi et al. (2003) criterion for the classification of precipitation systems. There are slight differences among different classification schemes, which leads to small differences in the DSD characteristics, and hence the choice of different classification schemes is subjective. To the best of author's knowledge, Bringi et al. (2003) criterion didn't have any limitation/drawbacks for analyzing the DSD spectra in the WGs regions. So the authors strongly believe that Bringi et al. (2003) criterion can effectively be used to classify stratiform and convective rain types. As the present study intends to understand the DSD differences between convective and stratiform (rain which does not come under the convective category) rain systems, we adopted the well-known Bringi et al. (2003) criterion. To classify precipitation into stratiform and convective types, Bringi et al. (2003) considered 5 consecutive 2 min DSD samples. However, in the present study, 10 consecutive 1 min DSD samples are considered to classify the rainfall as stratiform and convective. If the mean rain rate of 10 successive DSD samples is greater than 0.5 mm h^{-1}, and if the standard deviation of 10 consecutive DSD samples is less than 1.5 mm h^{-1}, then the precipitation is classified as stratiform; otherwise, it is classified as convective.

Reference:

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Harikumar, R.: 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, 132:377–390, 2020.

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