

Interactive comment on “Skewness as measure of the invariance of instantaneous renormalized drop diameter distributions – Part 1: Convective vs. stratiform precipitation” by M. Ignaccolo and C. De Michele

Anonymous Referee #2

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Comments on paper : “Skewness as measure of the invariance of instantaneous renormalized drop diameter distributions – part 1 Convective vs Stratiform precipitation.” By Ignaccolo and De Michele.

I only comment below on aspects which have not been covered already in the discussion opened by reviewer 1. The authors introduce an original concept : the idea of using the distribution of the skewness of the instantaneous DSD data set, as a measure their departure from a “universal normalized DSD” calculated over the same

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data set. The concept is original and allows a relatively simple quantification of the variability or on the opposite similarity in the shape of the instant normalized DSDs within a data set. The concept is tested here on one data set gathered in Darwin. A data set that the authors have already used to introduce their new normalization methodology and to show the similarities between the “Convective” and “stratiform” normalized DSD, in Ignaccolo and De Michele 2010 (GRL).

-The authors are precise in their explanations and argumentation, and in presenting the mathematical developments; however, as mentioned by Rev1, I find the paper difficult to read and the text somehow dry.

-Fig 5 could be suppressed I think and this (rather trivial) result only mentioned in a paragraph.

Apart from the above I don't have any major comments about the content which is presented,

however, my main concern about this paper is the following : Given the existence of the above mentioned Ignaccolo et al 2010 and the existence of the companion paper (part 2) in which the main concept and result of part 1 (:i.e. the distribution of skewness for the Darwin data set and its relative stationnarity between the Convective and stratiform data sets) are reported again, I don't really see the interest (for the readers, I mean) of splitting the present results in 2 papers that are, in my view, quite redundant. I would like the authors to convince me on that point. I believe the present results could be compacted and integrated together with part 2 in a paper that discuss DSD skewness distribution and its variability both among geographical zone and rainfall type.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 5605, 2011.

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