

## ***Interactive comment on “Climatological characteristics of raindrop size distributions within a topographically complex area” by S.-H. Suh et al.***

### **Anonymous Referee #4**

Received and published: 13 July 2015

Comments of the 4th referee:

I think this paper needs several important corrections before its publication.

- Title: I think that the "Busan" and/or "Korea" should be inserted in the title.
- Page 4006, line 12: Please define Dm
- Page 4006, Lines 19-22 (minor remark): Even if DT and NT are well defined, the reader thinks about diameters and concentrations...
- Page 4006, Line 24: DSD doesn't control microphysical processes. It's the contrary.

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- Page 4007, line 6 and for each following equations: Please precise the units.
- Page 4010, equation 4: The numerator has to be reversed with the denominator.
- Page 4010, equation 9: D3 and  $v(D)$  are missing !!!
- Page 4011, line 14-15: I do not understand the second quality control.
- Page 4011, line 18 and Page 4013, line 10: Several thresholds on R and Dm are used. It is therefore very important to indicate on what timestep R is computed and for what timestep R and Dm are used in the cited literature.
- Page 4011, Some more explanation and reference about the POSS are missing.  
Moreover, I wonder how is the accuracy of POSS observations in presence of strong winds (typhoons)
- Page 4011, Line 28, and Figure 3: The graph and the written values on the graph seem to be not consistent.
- Page 4012, line 10: I didn't find the reference to Hamilton in the list of references. Moreover, a threshold of 0.5 mm/h for average 5min rainfall intensity seems to me very low!

Page 4013, line 8: "Gamadre" should be replaced by "Gamache"

- Page 4014, line 3: Units are wrong (replace by mm)
- Page 4014, line 21: "The distribution of  $\mu...$  is more frequent", this kind of sentence is not clear. The following sentence seems to be contradictory with the previous (I'm not sure).
- Page 4015, lines 19, 20 and 23: Units for log-transformations should be removed
- Page 4015, line 21-22: What is the usefulness of this information?

In fact, the PDF curves are crossing each others on each graph and they usually have

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therefore some common values.

- Page 4015, line 28 and Page 4016, lines 1-2: I don't understand totally this sentence. Is the beginning of the sentence necessary?

- Page 4035, I think that graph (b) is not easily readable.

Maybe the authors may zoom on  $1 < D_m < 2$  mm?

- Page 4017, line 18, I think that the sentence beginning with "The distribution of 1 min. . ." could be the beginning of a new paragraph.

- Page 4018, the last lines about the disagreement with Chang and al. (2009): My personal point of view is that the scale of a typhoon is large and the characteristics of DSD certainly differ according the location inside the typhoon and/or the development stage of the typhoon.

- Page 4019, line 24: Could you add a reference for "Nw generally varies inversely to Dm" ?

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 4005, 2015.

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