**Atmospheric
Measurement
Techniques
Discussions**

Interactive
Comment

Interactive comment on "Effect of sampling variation on error of rainfall variables measured by optical disdrometer" *by* X. C. Liu et al.

Anonymous Referee #2

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The paper presents a study on sampling errors of optical disdrometer via MonteCarlo simulations. While the approach has a good potential there are some garish errors in the paper, that makes the paper not publishable. I do recommend rejecting the paper. Also the English is in general poor and needs certainly to be revisited (if the authors intend to re-submit the paper). Some of the major problems I spotted: 1) All computed Z values are above 81 dBZ, i.e. in a totally unrealistic range; 2) Some of the W computed values are also in unphysical region (above 10 g/m^3); 3) The terminology is sometimes incorrect (e.g. N_0 is not the total drop concentration, what is the water concentration?). 4) Eq (7): I do not know where this parameterization is coming from (add a reference), but it seems to have unphysical discontinuity at D=0.1 and 1 mm. 5) I simply do not believe Fig2: it seems that actually lowest samples

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number produce better results. The same applies to Fig.4. We would dream to have such small errors from disdrometer measurements!!!! The paper would also benefit from: a) Simulation based on different DSD shapes (e.g. changing the mu parameter) b) An in-depth comparison with error assessment coming from real measurements.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 8895, 2012.

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