

Interactive comment on “Dimensions and aspect ratios of natural ice crystals” by J. Um et al.

Anonymous Referee #3

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This discussion paper presents a comprehensive data set of the microphysical properties of ice particles from three aircraft campaigns and for a wide temperature range from -1.0 to -81.5°C. Although it is limited to pristine ice particles only, it gives novel and useful data on the temperature dependence of ice particle microphysics. I recommend the publication of the paper in ACP after the following points have been addressed by the authors:

- 1) The authors state that the presented data set represents only 10% of all atmospheric ice particles and that the remaining 90% are not pristine. It would be very helpful if the authors would give some information of those particles as well, i.e. what are the main microphysical features and how do these correlate with the observations in the pristine cases (e.g. basic habit, crystal distortions like hollowness)?
- 2) Ice particle growth speed is dependent on temperature, as stated by the authors,

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but also on the supersaturation with respect to ice saturated conditions. This should be noted in the paper. Did the authors try to correlate their observations also with the saturation conditions?

3) With the CPI imaging method only larger particles above a certain size threshold can be investigated. What are the size limits used in the study? What particle fraction of the total size distribution has been investigated? If available it would be very informative to give these fractions (or, if possible, the size distribution) for the different campaigns and temperature regimes.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 31111, 2014.