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Interactive comment on "Observations of meteoritic material and implications for aerosol nucleation in the winter Arctic lower stratosphere derived from in situ particle measurements" *by* J. Curtius et al.

Anonymous Referee #1

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Comments on Observations of Meteoritic Material and Implications for Aerosol Nucleation in the Winter Arctic Lower Stratosphere Derived from in situ Particle Measurements

Curtius et al. describe here observations near and within the polar vortex of aerosol size and volatility from the Geophysica aircraft. These observations appear to indicate a high fraction of meteoritic material, consistent with previous studies. The quality of the data and the authors' insight are excellent and this is a well written and interesting

paper. There are only minor issues that should be corrected.

Page 5044 Line 22: ‘Ěthe cut-off is slightlyĚ’: Please quantify ‘slightly’.

Page 5046 Line 20: ‘Ěthe two instruments agreed within 20% or better.’: This topic could use a little more discussion. Specifically the previous fits would seem to suggest a very close agreement, within a few %, and yet here the authors state 20%. This is directly related to credibility of the data. Is the fit normally better and 20% at worst?

Page 5054 Lines9-15: ‘Ěf can be utilized as a directly measurable vortex tracer.’ Although f appears to be useable as a vortex tracer this statement should be qualified in that it goes a bit too far. It is clear from Figure 6 that f would be a very noisy tracer and is not of the quality of traditional tracers. See also the discussion just before and within the Summary: a discussion of other refractory particles near the polar vortex (Baumgardner) would seem to suggest the utility of this ‘tracer’ would be limited in many situations.

Page 5055 Line 18: ‘Both size distributions peak near the smallest channel Ě’ It would appear this is a peak related to instrument performance and not necessarily the physical size distribution. Please clarify.

Editorial:

Page 5047 Line 4: This sentence needs to be rewritten. It should be ‘In this wayĚ’ and eliminate ‘anymore’. Rfi should be defined.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 5039, 2005.