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Atmospheric Measurement Techniques Discussions

Interactive comment on "Fallspeed measurement and high-resolution multi-angle photography of hydrometeors in freefall" *by* T. J. Garrett et al.

Anonymous Referee #2

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This is a well written paper, which is original and worthy of publication. The instrument the authors have constructed and describe here has the potential to improve our understanding of the microphysics. There are a few general concerns or questons:

1. line 265 highlights and Fig. 1 shows that there is no windskirt with this instrument.I am curious why this was not considered, especially in light that the instrument will be put in exposed mountainous and other locations?

2. Since there is no windskirt, the authors note that the hydrometeor fallspeed can not be measured, but rather it is a combination of terminal fall speed and turbulent wind field. However, the authors present some results in lines 300-305 for Fig. 4, in which they refer to the results as fallspeed, which seems to contradict what is actually

measured. More importantly, given the issue of turbulence, how much confidence should we have in the Fig. 4 results? This result of little change in fallspeed as the particles get more aggregated seems a little counterintuitive.

3. One of the motivations in the beginning of the paper is the issue of riming of snow. Based on the images provided and text, it is not clear whether this instrument can accurately record the degree of riming, and is it possible to automate this degree of riming?

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 4827, 2012.