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Atmospheric Measurement Techniques Discussions

Interactive comment on "Cirrus crystal fall velocity estimates using the Match method with ground-based lidars: a first case study" *by* D. Dionisi et al.

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We thank the two anonymous referees for the constructive comments that have been useful to improve the paper. As the major comments by the two referees are similar, casting doubts on the results of the selected test case and highlighting some issues that were not considered in our analysis, we would like to clarify the purpose of this work, which probably did not come out from the paper. The aim was to assess the feasibility of applying a Match technique, coupled with ground-based lidar measurements, to investigate the mean changes in microphysical cloud properties

during the advection of a cirrus clouds, with a particular interest on crystal mean fall velocity. With this purpose we developed and applied this approach to the existing lidar database of the RTV and OHP lidar sites. Therefore the results obtained from the analysis of the selected test case, even if we are conscious that is not an ideal one, are useful mainly to assess if this technique is adequate to this type of study. This is also the reason of submitting the paper to AMT and not to ACP (as erroneously written by the second anonymous reviewer): the objective was to develop a methodology and to identify and discuss the main critical issues. Although several uncertainties that, in this revised form have been considered in more details, we think that, with significant implementations (listed at the end of the paper) this observing strategy could be useful to cirrus studies. To specify and clarify the aim of this work, major revisions have been made on the paper, following the comments of the referees. In particular, the title of the paper, the abstract and last part of the introduction were partially modified. To discuss test-case uncertainties and consistency, a new section (4.4) was added and conclusions were rewritten. We include, as additional information, the revised discussion paper with all the corrections highlighted in yellow in the supplement file.

Please also note the supplement to this comment:
http://www.atmos-meas-tech-discuss.net/5/C2794/2012/amtd-5-C2794-2012-supplement.pdf

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 5787, 2012.

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