Atmos. Chem. Phys. Discuss., 10, C12498–C12499, 2011
www.atmos-chem-phys-discuss.net/10/C12498/2011/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Thin and subvisible cirrus and contrails in a subsaturated environment" *by* M. Kübbeler et al.

Anonymous Referee #1

Received and published: 18 January 2011

In this manuscript Kubbeler et al. discuss aircraft observations and model studies of subvisible and contrail cirrus in a subsaturated environment. Subvisible cirrus are a topic of great interest given their possibly large radiative impact and large global coverage. Contrails are somewhat less interesting given the large amount of literature on their properties but their inclusion here is appropriate and there are nice results considering their interaction with existing cirrus ice crystals. The paper is very well written and the figures appropriate. I have only very minor comments I hope the authors will consider. In conclusion I recommend that this paper be published in ACP.

Minor comments:

(1) On page 3155 I believe the repetition of hours of flight encounter are redundant to the abstract and should be removed ($\sim$ line 10)

(2) Same page, line 14. Please add a paragraph which defines 'subvisible'. I know there are various definitions but given the central theme of this work please define why 'visible' cirrus are not considered? What is the delineation?

(3) Section 2.2 on page 31157: There has been extensive work recently on the shatter artifact of ice crystals concerning the probes used in this paper. Of particular interest is the work of Korolev et al. Given the topic I believe a paragraph or two of expanded explanation needs to be added as the few lines here essentially dismissing this artifact are not sufficient. Specifically I would like to see an attempt at a possible size of the artifact, perhaps using Korolev's data, instead of acknowledging but assuming it to be small.

(4) Page 31167 line 15: Add 'the' before 'lowest'

(5) I believe Table 1 is redundant to the text explanation. As it does not add additional information I think it should be removed.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 31153, 2010.