

Interactive comment on “Factors controlling contrail cirrus optical depth” by B. Kärcher et al.

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Received and published: 27 July 2009

1) Sedimentation / Growth

The CCSIM simulates sedimentation explicitly as a function of size of individual particles from the predicted size distribution, whereas the LES parameterizes sedimentation in a two-moment (total number and bulk mass) ice scheme. The difference in predicted IWC from the two models is mainly tied to the lapse rate prescribed in the LES but not in the CCSIM. We have modified parts of the text in Section 2.1.3 (first and third paragraphs) to clarify this issue. As for the connection between the scaling factor (relating true and tuned supersaturation) and ice growth, we have modified text in the paragraph following Eq.(10) for clarification.

2) Turbulence parameter

The value $\delta = 0.65$ is not unique but constrained by comparison to the LES results. This was not explicitly mentioned on page 11,599, lines 16+17, so we add this statement.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 11589, 2009.

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Interactive Discussion

Discussion Paper