

Interactive comment on “Cirrus clouds triggered by radiation, a multiscale phenomenon” by F. Fusina and P. Spichtinger

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We thank you for your positive comments and helpful suggestions.

General Comments:

Trace gas concentrations:

The trace gas concentration (and also the ozone profile) is related to mid 1970's conditions. These values are default setup for the radiative transfer model code and have been used for model calibrations. Since for the temperature profile above the upper troposphere/lowermost stratosphere the US standard atmosphere (profile originated from observations during the 1970's) is used, generally the trace gases and the temperature profiles are more consistent than using actual values. Nevertheless we tested

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some of our simulations with current trace gas concentrations compositions, but the change for study-relevant variables (i.e. IWC, N or optical depth) is negligible (< 1%). This is due to the fact that the effects of clouds and water vapour on radiation are much stronger than the impact of the trace gases.

Specific Comments:

p. 1142: changed references for figure 4. Now, 4c and 4d are cited correctly.

p. 1143, line 10: changed references for figure 5.

p. 1146, line 23-25: Sentence changed to: “It follows that the enhanced water-vapor content increases the size of the ice crystals but not their number concentration.”

p. 1148, line 2: Reference for profile 1 added.

Minor Comments:

All additional minor comments and changes in orthography has been taken into account. Additionally, we have tried to improve the text by the help of a native english speaker.

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