Atmos. Chem. Phys. Discuss., 9, C927–C928, 2009
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Atmospheric Chemistry and Physics Discussions

Interactive comment on "A simple model for cloud radiative forcing" *by* T. Corti and T. Peter

Anonymous Referee #1

Received and published: 19 May 2009

This manuscript of Corti and Peter presents a model for the longwave and shortwave cloud radiative forcing, based on radiative transfer model calculations. The manuscript is well written, clear and concise. I think the paper can be accepted after a minor revision. I do have only a few small comments below.

The exact definition of radiative forcing, employed in different studies, might slightly differ, as the authors elaborate around line 3 of block 8544. Maybe this could be mentioned briefly also already in the first paragraph of Introduction, where different estimates for radiative forcing are given: how the radiative forcing was defined in these (according to IPCC definition or slightly differently). Also some discussion about the potential influence of these assumptions (for instance, whether readjustment of stratospheric temperatures is assumed or not) in the forcing estimates would be of interest.

About the equation 3: please introduce Tc after the equation. It becomes clear that

this is cloud top temperature and is later mentioned (for instance, around the equation 5), but should be mentioned already here.

Line 2, block 8544: "... where radiative forcing ...". It seems that a verb is missing in this sentence.

Line 15, block 8544: "define" should be "defined".

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 8541, 2009.