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# Cirrus, cloud microphysics and aerosols: detailed models versus global climate models

**U. Lohmann**

Institute for Atmospheric Science and Climate, Swiss Federal Institute of Technology, Zurich, Switzerland (ulrike.lohmann@env.ethz.ch, Fax-Nr: +41 1 633 1058)

The impact of aerosols on cirrus clouds is best represented in Lagrangian parcel models where the aerosol size distributions can be characterized in most detail. Such parcel model simulations can be used for example to derive and validate parameterizations of homogeneous and heterogeneous freezing (Kärcher and Lohmann, 2002, 2003) or to characterize the vertical velocity that is representative for cloud droplet activation (Peng et al. 2005). These parameterizations can then be applied in coarser models, such as global or regional climate models. In this talk, I will show different examples of how parcel models or cloud resolving models can be used to improve our understanding of the different processes, to derive parameterization of aerosol-cloud interactions and for validation of global climate models.

References:

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