



Regime based investigation of the second aerosol indirect effect for liquid water clouds using satellite data

Claudia Unglaub and Johannes Quaas

Universität Leipzig, Leipzig Institute for Meteorology, clouds and global climate, Leipzig, Germany (unglaub@uni-leipzig.de)

Anthropogenic aerosols may affect cloud micro physical processes and subsequently cloud liquid water path via the so-called "second aerosol indirect effects". To obtain a better quantification of such effects the variability of the liquid water path is investigated to study the sensitivity of liquid water clouds to perturbations in the cloud droplet number concentration. For the statistical analysis the A-Train satellite constellation CCCM data product is used.

We will analyze the ISCCP cloud class based correlation between the satellite-derived liquid water path and cloud droplet number concentration for liquid water clouds. Furthermore a possible new cloud classification for the high resolution CCCM data set will be presented. The goal of these studies is a better understanding and the assessment of the radiative forcing by the second aerosol indirect effects on liquid water clouds.