Investigation of direct aerosol effect in cloud sky regions

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Abstract

One of the factors causing a large uncertainty in the estimates of the radiative forcing (RF) of the direct aerosol effect is the contribution in cloudy sky region. In AeroCom Phase I even the sign differed of the cloudy sky RF between the nine global aerosol model (Schulz et al., 2006). In this study a large set of results from AeroCom Phase II and previously published results will be compared to illustrate the important factors for the cloudy sky RF. The results will be combined with idealized simulations to illustrate the important factor for the RF in the cloudy sky regions. It is shown that single scattering albedo of the aerosols play a crucial role in the cloudy sky RF. A relatively small change in single scattering albedo may change the sign of the cloudy sky RF.

Preference for oral presentation. Presenter G. Myhre (gunnar.myhre@cicero.uio.no)