



Impacts of absorbing aerosols on clouds and dynamics in idealized sensitivity studies using the ECHAM6 General Circulation Model

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Well-characterized aerosol absorption in climate models is essential to understand the impacts of aerosols on dynamics of the atmosphere and cloud properties. To elevate the current knowledge about aerosol research, this study uses an idealized setting to investigate effects of absorption using a climate model. In the ECHAM6 General Circulation Model, changes in atmospheric variables including but not limited to temperature, cloud cover, surface and top of the atmosphere solar radiation and precipitation have been investigated with varying distributions and properties of absorbing aerosols. All of the experiments have been done in an Aquaplanet setup. The presentation will discuss the effects of varying amount, absorption (single-scattering albedo), layer height and distribution of the aerosol on cloud distributions and features of the general circulation.