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Radiative properties of clouds in atmospheric boundary layer

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The purpose of this paper is to show the influence of the Atmospheric Boundary Layer (ABL) conditions on the microphysical parameters of clouds and on the radiative properties, such as cloud optical depth and cloud albedo. The optical properties of clouds, especially the albedo, are dependent on the aerosol loading of ABL and on the humidity profiles. We studied this dependence by using LIDAR backscattering and aerosol concentrations profiles. The influence of both liquid water content (LWC) changes and changes in cloud geometrical thickness on cloud optical depth in connection to aerosol optical depth is also examined. Such studies are relevant for the parameterization of cloud optical properties in General Circulation Models (GCM).