**Evaluation of ice clouds in COSMO-DE with satellite observations**

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Ice clouds have a large impact on the Earth´s climate system due to their effects on the global radiation budget. A good description of ice clouds is therefore a major challenge for both climate and numerical weather prediction (NWP) models. Meteosat Second Generation (MSG) Spinning Enhanced Visible and InfraRed Imager (SEVIRI) observed brightness temperatures (BTs) at 10.8 µm are a good indicator for clouds at a spatial and temporal coverage suitable for assimilation in NWP. The regional NWP model COSMO-DE of the Deutscher Wetterdienst (DWD) is known to produce a bias concerning the occurrence of low BTs at this frequency. A novel two-moment cloud ice microphysical parameterization developed by Köhler and Seifert is able to distinctly reduce this bias. The question is, which part of the new microphysical scheme is actually responsible for this improved performance. In order to solve this issue, we perform sensitivity studies with the model and evaluate them with satellite data. We make use of CloudSat Cloud Profiling Radar (CPR) and Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations (CALIPSO) Cloud-Aerosol LIdar with Orthogonal Polarization (CALIOP) observations, since they offer the so far unique opportunity to vertically resolve clouds from space. Both observation-to-model (CloudSat IWC retrieval) and model-to-observation (QuickBeam) approach are pursued, since the combination promises to provide the most complete picture.