ACG39-P07 : :5 19 18:15-19:30

A-Train NICAM
Evaluation of cloud radiative forcing simulated by the NICAM with A-Train

[1*], [1], [2], [3], [4], [5], [2]
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Global satellite observation provides valuable information not only to the retrievals of physical quantities relevant to aerosol and clouds but also to the evaluation of these simulated by GCMs and cloud resolving models. We discuss synergetic use of A-Train satellite observations to evaluate cloud and precipitation fields simulated by a global cloud-resolving model (GCRM). Our previous efforts were made in evaluating cloud microphysical quantities by comparing simulated satellite signals against observation. However, for the context of climate prediction, it is crucial to understand the differences in terms of the radiation energy budget. In this presentation, effective ways to evaluate the relationships between vertical profiles of active sensors and TOA cloud radiative forcing are discussed.

The outputs from the Nonhydrostatic Icosahedral Atmospheric Model (NICAM) are run through a satellite signal simulator (Joint Simulator for Satellite Sensors) to simulate CloudSAT/CALIPSO/CERES data. This study uses a merged dataset for CloudSat and CALIPSO, and CERES SSF level2 is co-located to the grid. A simple CloudSat cloud-type scheme is applied to the observed and simulated merged dataset. Then, the cloud radiative forcing will be evaluated for each cloud type.

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Keywords: global cloud-resolving model, A-Train, cloud radiative forcing, satellite data simulator