Geophysical Research Abstracts, Vol. 7, 02487, 2005
SRef-ID: 1607-7962/gra/EGU05-A-02487

Evaluation of global precipitation simulated with a global cloud-resolving model and its comparison with satellite analysis

M. Satoh (1,2), H. Tomita (1), T. Nasuno (1), H. Miura (1), and S.-I. Iga (1)
(1) FRCGC/JAMSTEC, (2) Saitama Institute of Technology (satoh@jamstec.go.jp)

As an evaluation of global precipitation, we are developing a next generation global circulation model by explicitly resolving clouds on the global domain. The new model is based on nonhydrostatic equations with explicit cloud microphysics and an icosahedral grid system is chosen on the globe to obtain high computer performance on massively parallel computers such as the Earth Simulator. The new model is called Nonhydrostatic ICosahedral Atmospheric Model (NICAM).

We have performed a global cloud-resolving simulation with grid interval of 3.5 km on an aqua planet setup using NICAM. We found that the simulation well capture many realistic features in the tropics; hierarchical structure of clouds, intraseasonal oscillation including the Madden-Julian Oscillation (MJO) -like signal, and diurnal cycle of precipitation. These results are to be compared with the observed analysis obtained with the TRMM data. We also describe a strategy to study meteorological extreme evenets using the global cloud-resolving model and global precipitation measurements.