High resolution simulation for tiles-like patched neighboring local regions by a cloud resolving model, CReSS

Mayumi Yoshioka[1]; Kazuhisa Tsuboki[1]; Masahiro Watanabe[2]; Atsushi Sakakibara[3]

[1] Nagoya Univ.; [2] CCSR; [3] CTI

http://rain.hyarc.nagoya-u.ac.jp/

The real atmosphere is like a work of kinetic art of highly technique applied, which we want to copy a figure in the computer with numerical simulation. No united model to copy the whole atmospheric figure has been established even though including well developed up-to-date numerical simulation methods, because atmospheric numerical models usually focus their target phenomena of different timescales and are developed the phenomena, e.g. mesoscale model for a storm and global model for a climate problem. To achieve our aim to copy a larger atmospheric figure including well represented smaller mesoscale phenomena, a simulation method of zooming-up the target mesoscale regions is one solution.

The 'mosaic' method is developed to simulate target local mesoscale phenomena in high resolution, in the larger atmospheric region. As domains of the mesoscale model, smaller local regions are set in neighboring tile-like patched for covering target phenomena in the method. A cloud resolving model CReSS (Cloud Resolving Storm Simulator) utilizes the method for mesos-system simulation of moving over the domains, in high resolution, for example tropical cyclones of 10-days lives in traveling over hundreds kilometers.

In our talk, we are going to introduce a numerical simulation technique for 'mosaic pattern regions' using CReSS and the results of 'mosaic' simulations.