Sub-hourly output over Tropical Western Pacific for June, July, August 1997

To evaluate the simulation of deep convection over the Tropical Western Pacific (TWP) in the Canadian Atmospheric Model version 4.3 (CanAM4.3) we compare sub-hourly output against output from the super-parameterized Community Atmospheric Model version 5 (spCAM5). Both models used observed sea-surface temperatures, sea-ice distribution and atmospheric gases and simulated the period January through August, 1997. Model output related to deep convection for CanAM4.3 is saved every 15 minutes over the region bounded by 150 and 170 E and 0 to 10 N while the spCAM5 output was saved every 10 minutes over the same region. The CanAM4.3 data includes results from a single simulation and from an 5 member ensemble of CanAM4.3 simulations.

Relevant publications:

Description of CanAM:

von Salzen, K., Scinocca, J. F., McFarlane, N. A., Li, J., Cole, J. N. S., Plummer, D., Verseghy, D., Reader, M. C., Ma, X., Lazare, M., and Solheim, L.: The Canadian Fourth Generation Atmospheric Global Climate Model (CanAM4). Part I: representation of physical processes. Atmosphere-Ocean, 51, 104-125, doi:10.1080/07055900.2012.755610, 2013.

Description of CAM5 and spCAM5:

Khairoutdinov, M. F. and Randall, D. A.: A cloud resolving model as a cloud parameterization in the NCAR community climate system model: preliminary results. Geophys, Res. Lett., 28: 3617–3620, 2001.

Khairoutdinov, M. F. and Randall, D. A.: Cloud resolving modeling of the ARM summer 1997 IOP: Model formulation, results, uncertainties, and sensitivities, J. Atmos. Sci., 60, 607–625, 2003.

Neale, R. B., and Coauthors.: Description of the NCAR Community Atmosphere Model (CAM 5.0). NCAR Tech. Note TN-35 486, 274 pp, 2012.

Description of simulations and analysis:

Mitovski T., Cole, J. N. S., McFarlane, N. A., von Salzen, K., and Zhang, G. J.: Convective response to large-scale forcing in the Tropical Western Pacific simulated by spCAM5 and CanAM4.3. submitted to GMD, July 2018.