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TRACKING TROPICAL CLOUD SYSTEMS – COMPARISON OF OBSERVATIONS WITH SIMULATIONS BY THE WEATHER RESEARCH AND FORECASTING (WRF) MODEL

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ABSTRACT

To aid in improving model parameterizations of clouds and convection, we examine the capability of models, using explicit convection, to simulate the life cycle of tropical cloud systems in the vicinity of the ARM Climate Research Facility (ACRF) Tropical Western Pacific sites. The cloud life cycle will be determined using a satellite cloud tracking algorithm (Boer and Ramanathan, 1997), and the statistics will be compared to those simulated using the Weather Research and Forecasting (WRF) Model. Simulations are run at a resolution comparable to the observations using the New York Blue, a Blue Gene/L supercomputer that is co-operated by Brookhaven National Laboratory and Stony Brook University. Later investigations will examine how well the simulated cloud systems compare with ACRF observations in terms of properties such as cloud overlap within the vertical column as a function of cloud life cycle stage. Boer, E, and V Ramanathan. 1997. "Lagrangian approach for deriving cloud characteristics from satellite observations and its implications to cloud parameterization." Journal of Geophysical Research, 102 21,383–21,399.
