

Prof. Dennis L. Hartmann
Chair, Department of Atmospheric Sciences
Room 408 Atmospheric Sciences Building
University of Washington
Seattle, Washington 98195 USA
Tel: 206 543-7460
Email: dennis@atmos.washington.edu
Web: www.atmos.washington.edu/~dennis

Observational Validation of the Fixed Anvil Temperature Hypothesis

Dennis L. Hartmann, Terry Kubar and Robert Wood
University of Washington, USA

Using data from MODIS and other satellite and insitu data sets, the theory is tested that tropical anvil clouds have a nearly constant temperature (Hartmann and Larson, 2002). The Eastern and Western Tropical Pacific Ocean Regions are compared. In both the Eastern and Western Pacific, the cloud fractional cover from MODIS as a function of air temperature is in very good agreement with the divergence calculated from the clear sky radiative cooling. It is found that the Western Pacific anvil clouds are slightly colder, than the Eastern Pacific clouds, however. The difference is explained by the greater relative humidity in the Western Pacific.