

Abstract Submitted
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A comparison of scaling in satellite and in situ water vapor measurements KYLE PRESSEL, WILLIAM COLLINS, The University of California, Berkeley, ANKUR DESAI, The University of Wisconsin, Madison — Improvements in the characterization of cloud scale variability of water vapor are a direct means of improving stochastic parametrization of clouds in global climate models (GCMs). The Atmospheric Infrared Sounder (AIRS) provides nearly global physical retrievals of the vertical profile of water vapor mass mixing ratio, at resolutions far greater than cloud scale. The 447m WLEF tower located near Park Falls, WI is instrumented to provide high frequency (10Hz) observations of water vapor at 396, 122, and 30m above ground level. Using Taylor's hypothesis, the high frequency tower observations can be used to characterize the variability of water vapor at or near cloud scales, but only at a single location. In this work, we will compare the climatology of water vapor scaling (scale-invariance) observed by AIRS and from the WLEF tower, in an effort to examine the potential use of the scale-invariant properties of the water vapor field to gain global information about cloud scale water vapor variability from AIRS.

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