



## **Scale separation for moisture-laden regions in the tropical atmosphere**

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The size distribution of moist regions in the tropical atmosphere exhibits two modes of organization, one at mesoscales and synoptic scales and the other at planetary scales. We show the existence of these two modes in three data sets: column-integrated precipitable water, relative humidity in the upper troposphere, and outgoing long-wave radiation. The two modes differ in their typical humidity and characteristic vertical circulation. A simple box model of radiation and convection in the Tropics helps explain the presence of these two modes. Atmospheric dynamics in the lower troposphere seems to operate the scale selection.