Abstract Details

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Title: Cloud and Precipitation Characteristics over the Western Pacific Reve TRMM and other Satellites

Abstract:

Western Pacific is the well-known strong cloud activity region. The cl activity drives the general circulation, such as Walker Circulation and Circulation. Thus, the cloud and precipitation characteristics is crucial understanding the actual driving mechanism. The tropical Rainfall Me Mission (TRMM) satellite was launched in November 1997 and provide unique data on the three dimensional precipitation system structure t to the precipitation radar onboard TRMM. TRMM observation, howeve snapshot and it is difficult to observe the cloud and precipitation syste evolution. On the other hand, visible/infrared observation from other satellites makes possible to observe evolutions. The observation from geostationary orbit is hourly and has far more frequency that TRMM. we tried to combine TRMM data with other satellite data to reveal characteristics of the cloud and precipitation system over Western Pa Using the geostationary satellite (GMS) data, we identified each cloud system over and around the maritime continent. The systems were categorized as over land, over coast and over ocean. The TRMM data the cloud system were picked up and statistical characteristics of precipitation, storm height, etc. in terms of cloud system evolution w revealed. The rainfall was the maximum at the time of TBB minimum earlier. Vertical development was significant over coast area, while remarkable horizontal expansion appeared over land. Precipitation ice the storm height showed differences among land, coast, and ocean. N the relationship between cloud and precipitation activity and the sea s condtions was investigated. OLR, rainrate, storm height were used as of cloud activity. The surface conditions include SST, near surface win and near surface wind divergence. Midlevel (500 hPa) veritcal velocti NCEP reanalysis data set was used as a parameter representing the e atmospheric circulation. When the surface condition is unfavorable fo convections, the atmospheric circulation strengthens the existing syst anvil amounts. On the other hand, when the suface condition is in fav convections, the storm height easiliy reaches its limit and is insensitiv atmospheric circulation, but rain occurrence cloud particle density see affected by the atmospheric circulation.

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