

AAS003-P09

Room: Convention Hall

Time: May 27 17:15-18:45

Cloud-top-height variability associated with equatorial Kelvin waves in the tropical tropopause layer

Junko Suzuki^{1*}, Masatomo Fujiwara², Atsushi Hamada³, Kunio Yoneyama¹, Youichi Inai², Shirooka Ryuichi¹, Fumio Hasebe²

¹JAMSTEC, ²Hokkaido University, ³RIHN

Cloud-top-height variability over the Indian Ocean in association with equatorial Kelvin waves in the tropical tropopause layer (TTL) is investigated using a new product for cloud-top height, radiosonde data taken during the Mirai Indian Ocean cruise for the Study of the MJO-convection Onset (MISMO) in October–November 2006, and ECMWF analysis data in 2006.

The new cloud-top height product uses split-window brightness temperatures observed by a geostationary satellite, and is useful for estimating the top height of tropical upper-tropospheric clouds including non-precipitating high clouds over a wide area every one hour.

Over the Indian Ocean, cloud-top height is found to be continuously descending, being coupled with the warm phase of Kelvin waves. It is suggested that low humidity at the warm phase of Kelvin waves in the TTL reduce high clouds in the TTL.

Keywords: Tropical tropopause layer, Equatorial wave, Cloud-top-height, Non-rainy high cloud