

R005-P21

ポスター 3 : 11/6 AM1/AM2 (9:00-12:30)

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Image analysis of the polar vortices of Venus observed by LIR

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Atmospheric temperature at the cloud tops of Venus around an altitude of 65 km decreases with latitude, but it is known that there are high-temperature regions near the poles and cooler regions around them. The high-temperature regions rotate around the poles, and called as the polar vortices, where zonal wavenumber 0, 1 and 2 shapes of the temperature distribution predominate [Garate-Lopez et al. 2013; Sato et al. 2014]. Previous studies have derived a rotation period of about -2.8 to -3.2 days and about -2.2 to -2.5 days for the northern and southern polar vortices, respectively, but the cause of the difference in the rotation periods of the northern and southern polar vortices is unknown [Schofield et al, 1983; Garate-Lopez et al, 2013]. In addition, no observational studies have yet investigated the relationship between Venusian atmospheric dynamics and the temperature structure in the polar regions.

The Venus orbiter Akatsuki has been orbiting around Venus in an almost equatorial plane since December 2015. Longwave Infrared Camera is one of the cameras onboard Akatsuki, still obtaining images of brightness temperature around the cloud-top altitudes every day. In this presentation, we report temporal variations of the rotational period and the center position of rotation of the polar vortices, and the comparison with atmospheric dynamics at mid- and low-latitudes, using brightness temperature data observed by LIR.