The study investigated latitudinal profiles of diurnal, semi-diurnal, and higher frequent components of thermal-tides in the temperature field obtained from long-term observation data by Longwave Infrared Camera (LIR) onboard Akatsukki that catches thermal emission from Venusian cloud layer (60-70km). We used the LIR data from October 2016 to December 2018 in which LIR had been remained to be turned on to prevent unexpected temperature increasing in LIR images, and we selected a specified emission angle (60°) in the analysis to minimize emission angle dependence of a limb darkening effect.

Thanks to the global coverage of LIR observation in both dayside and night side, a global thermal-tides structure (local time-latitude coordinate) was firstly obtained by averaging the long-term LIR observation. By applying Fourier analysis to the thermal-tides structure, we found that the semi-diurnal component was clearly dominant in lower latitudes (< 30°) whereas the diurnal component became significant in higher latitudes (> 45°), and both diurnal and semi-diurnal tides showed almost equatorial symmetric profiles. These characteristics were consistent with a numerical expectation in a global circulation model by Takagi et al. (2018). In addition, the diurnal component showed clear phase tilting in mid-latitudes, which may...
indicate latitudinal energy transportation due to the diurnal component, while the semi-diurnal and other components with higher wavenumbers did not show such clear phase tilting in low-mid latitudes.

In this presentation, we will provide the structures of each thermal tide components, and latitudinal profiles of their amplitudes and phases, and we will also discuss thermal-tides structures at different periods for more detail discussion about variability of the tides.

キーワード: 金星、熱潮汐波、LIR
Keywords: Venus, Thermal tides, LIR