Local time dependence of Pi2 pulsations at middle-and low-latitudes revealed from a numerical experiment

Shigeru Fujita[1], Masahiro Itonaga[2]

[1] Meteorological College, [2] Edu., Yamaguchi Univ.

Power spectra of a plasmaspheric cavity resonance (strictly, a plasmaspheric virtual resonance) in a longitudinally non-uniform plasmasphere are calculated. It is shown that the spectra depend on longitude. Therefore, a cavity resonance mode can have local time depending spectra when the plasmasphere is non-uniform in a longitudinal direction. This fact concludes that the local time dependent peak frequencies of the mid- and low-latitude Pi2 pulsations discussed by Kosaka et al. [2002] are also explained by the cavity resonance model. We also discuss that the surface eigenmode can be a possible generation mechanism for Pi2 pulsations localized in a longitudinal direction.