

PEM031-03

会場:103

時間:5月26日 09:00-09:15

ETS-VIII と MAGDAS 観測点 YAP で観測された Pi 2 の相関性 Correlation of Pi 2s Observed by ETS-VIII and MAGDAS/YAP

今城 峻^{1*}, 湯元 清文², 衛藤 菜穂¹, 阿部 修司², 魚住 禎司², 古賀 清一³, 小原 隆博³, MAGDAS/CPMN グループ²
Shun Imajo^{1*}, Kiyohumi Yumoto², Naho Eto¹, Shuji Abe², Teiji Uozumi², Kiyokazu Koga³, Takahiro Obara³, MAGDAS/CPMN
Group²

¹九州大学院理学府地球惑星科学専攻, ²九州大学宙空環境研究センター, ³宇宙航空研究開発機構

¹Earth and Planetary Sci., Kyushu Univ, ²Space Environ. Res. Center, Kyushu Univ, ³JAXA

Pi 2 is an impulsive geomagnetic pulsation with the period range from 40 to 150 seconds. Pi 2 is believed to be globally detectable with aurora breakup. Propagation modes of Pi 2 depend on geomagnetic latitude, local time and so on [cf. Yumoto et al., 2001].

In this study, we analyzed similarity and time lag of Pi 2s observed by ETS-VIII (Engineering Test Satellite-VIII; M.Lat=-7.88, M.Lon=218.56, Hight=36000km) [Koga and Obara, 2008] and by MAGDAS (MAGnetic Data Acquisition System) [Yumoto et al., 2006] station located at the magnetic equator, YAP (M.Lat=1.49, M.Lon=209.09), using cross-correlation. For the analysis, we selected 88 Pi 2 events which showed clear Pi 2 pulsation (p-p more than 0.3nT) during 19:00-03:00LT. The analysis period covered a year from 16 September 2008 to 31 August 2009.

From the analysis, the following results are obtained;

(1) The correlation coefficient between Y-component (compressional) of ETS-VIII and H-component (compressional) of YAP is the highest for combinations of each components, X-, Y-, Z- components of ETS-VIII and H-, D-, Z- components of YAP.

(2) The correlation coefficient between Y-component of ETS-VIII and H-component of YAP depend on local time. In the sector 19:00-21:00LT, 45% of Pi 2s shows positive correlation. In the sector 21:00-03:00LT, 68% of Pi 2s shows positive correlation.

(3) Time lag of Pi 2s from Y-component of ETS-VIII to H-component of YAP also depends on local time. In the sector 19:00-21:00LT, 19% of Pi 2s shows good coherency and time delays of at ETS-VIII 20-75 sec earlier than at YAP. In the sector 21:00-03:00LT, 67% of Pi 2s shows good coherency and time delays of at ETS-VIII 25-50 sec earlier than at YAP.