Dependence of FLR structures observed at the CPMN stations on magnetic longitude and latitude

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We have attempted to estimate the temporal and spatial variations of the plasma mass density in the plasmasphere from CPMN(Circum-pan Pacific Magnetometer Network) data. As the experiment, we use two methods; the cross-phase method and the amplitude-ratio method [Baransky et al., 1989], which are well known methods for identifying field-line eigenoscillations from ground magnetometer data at two stations closely located along the same meridian. In the research, we chose 6 stations in Australia and 5 stations in Russia and Japan.

In addition, we compare the plasma density estimated from the two methods with the visible images of the plasmasphere with the use of the EUV(Extreme Ultraviolet) imager on board the IMAGE satellite and with the solar wind parameters from the ACE satellite.

The possible applications of those methods using magnetometer data of many stations and satellite data compositely are discussed.