

ULF Pulsation Index and its Correlation with Solar wind Parameters

Yusuke Ishii[1]; Kiyohumi Yumoto[2]

[1] Earth and Planetary Sci., Kyushu Univ; [2] Space Environ. Res. Center, Kyushu Univ.

In the present study, in order to understand the correlation of the solar wind parameters and the activity of ULF (Ultra-Low-Frequency) magnetic pulsations, for space weather study we made the ULF pulsation index at low latitudes.

We investigated the relationships of the ULF index with the solar wind speed, density, total and 3-components magnetic fields, and the corn angle of the IMF to the Sun - Earth line.

The following results were obtained;

(1) Pc3~4 INDEX shows a good correlation with the magnetic field corn angle in the solar wind region.

(2) Pc5 INDEX is correlated with the solar wind speed.

These results are consistent with the theoretical generation mechanisms of Pc3~Pc5 magnetic pulsations.

It is concluded that Pc3~5 INDEX at low latitudes is useful to know the correlation between the solar wind variations and magnetic pulsations in the inner magnetosphere, and then to diagnose the solar wind by using the ULF index.