

The Relation Between Amplitudes of a Global-Mode Pc 5 Pulsations and Geosynchronous Electron Fluxes

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and America sectors). The specific selection criteria of the global mode of Pc 5 pulsation are as follows: Each Pc 5 event at each station must have amplitudes larger than 0.4 nT, and life periods longer than two hours: Such criteria are relatively strict compared with past studies, but are suitable for continuous monitoring of Pc 5 pulsations. We found positive correlation between the low-latitude ground global-mode Pc 5 amplitudes and the geosynchronous energetic ($E > 0.6$ MeV) electron flux, and found that the electron flux enhancement followed the Pc 5 amplitude enhancement; this is consistent with past studies. It is significant to compare this low-latitude global mode with low-latitude local-mode Pc 5 pulsations: This is the next subject for our ongoing research.

Keywords- Global Pc 5 pulsations, ULF Pc 5 pulsations and energetic electrons, Pc5-ground observations.

Abstract—Associative relationship between magnetospheric ULF waves in the Pc 5 range (1.7-6.7 mHz) and high energetic particles on the geosynchronous orbit has been investigated in detail in past studies. In particular, there has been interest in the efficiency of global Pc 5 waves, i.e., those having small m-numbers, in accelerating particles [1]. In this paper we investigated this feature by using energetic electron fluxes at geosynchronous orbits, and by using low-latitude globalmode Pc 5 pulsations: We used superposed epoch analyses to show correlations. In more detail, we have identified the global-mode Pc 5 geomagnetic pulsations as large-amplitude Pc 5's simultaneously observed at three low-latitude ground stations belonging to the Magnetic Data Acquisition System (MAGDAS), selected from different sectors of the globe (i.e., Europe-Africa, Japan