E113-P004 **Room: Poster Session Hall** **Time: May 22**

Study of Relationship Between MeV Electron Flux at the Geosynchronous orbit and Storm-time Pc5 observed at the CPMN stations

Akiko Fujimoto[1]; Manabu Shinohara[2]; Kiyohumi Yumoto[3]; Yumoto Kiyohumi Circum-pan Pacific Magnetometer Network Group[4]

[1] Earth and Planetary Sci.,Kyushu Univ.; [2] Kyushu University; [3] Space Environ. Res. Center, Kyushu Univ.; [4] -

Relativistic Electron Enhancement (REE) at outer radiation belt during magnetic storms damage satellites in space or lead to terrestrial communication outage. The above phenomenon brings hazards to our life, so we need to clarify the electron acceleration mechanisms of REE during magnetic storms.

There are a number of studies for dynamics of radiation belt. ULF waves are believed to contribute to REE. O'Brien *et al*. [2001] found that high solar wind velocity and high recovery phase long-duration Pc5 ULF power are closely associated with the production of relativistic electrons. Other studies also indicate that Pc5 ULF is involved with REE. However, no one has proven with hard evidence (i.e., observational data) the mechanism of how electrons accelerate to relativistic velocities.

We compared the data of: (1) magnetic datas of the CPMN (the Circum-pan Pacific Magnetometer Network), (2) 'greater than 2MeV Electron Flux' by GOES satellite at the Geosynchronous orbit, and (3) solar wind condition by ACE satellite. We want to clarify whether Pc5 ULF wave can accelerate and heat electrons, and to verify the solar wind characteristic as the generation factor of storm-time Pc5 ULF waves. The detail of our analysis is as follows;

(a)The relationship between Pc5 ULF wave and 'greater than 2MeV Electron Flux' at the Geosynchronous orbit

(b)The association the storm type (CME,CIR) with 'greater than 2MeV Electron Flux' at the Geosynchronous orbit

(c)The relationship between the storm-time Pc5 ULF wave and the solar wind parameters as trigger of it

We found that 'greater than 2MeV Electron Flux' is over 10^4 [/cm^2/sec/str] when the amplified Pc5 ULF lasts several tens of hours during the storm recovery phase, regardless of the storm type (CME,CIR). It takes between half-a-day and several days to reach the above threshold value. Additionally, long-duration Alfvenic variation in the solar wind is evident under this condition.

We discuss that the storm-time Pc5 ULF associated with long-duration Alfvenic variation in the solar wind accelerates relativistic electrons.