E020-019 Room: C311 Time: May 28 15:15-15:30

Storm time depression of AKR

Akira Morioka[1], Yoshizumi Miyoshi[2], Taeko Seki[3], Fuminori Tsuchiya[3], Hiroaki Misawa[4], Hiroshi Oya[5], Hiroshi Matsumoto[6], Kozo Hashimoto[6], Toshifumi Mukai[7]

[1] Planet. Plasma and Atmos. Res. Cent.,Tohoku Univ., [2] Planet. Plasma and Atmos. Res. Cent., Tohoku Univ., [3] Planet. Plasma Atmos. Res. Cent., Tohoku Univ., [4] Planet. Plasma and Atmos. Res. Cent., Tohoku Univ., [5] Space Commu. Fukui Univ., [6] RASC, Kyoto Univ., [7] ISAS

In this paper, we report the characteristics of AKR during the magnetic storm. It is well known that AKR becomes stronger as the substorm proceeds or AE index increases (Gurnett 1974, Voots et al., 1977). In the case of the magnetic storm, however, we found that AKR intensity decreases less than the pre-storm level or fades out around the main phase of the storm.

The observational evidences are,

1) The statistical analysis using PWS data with the Akebono shows that AKR intensity decreases during the main phase of the magnetic storm and increases remarkably in the recovery phase.

2) The Geotail observation from the distant magnetosphere shows the clear fade out of AKR during the main phase.

3) From the case study, it is shown that the above tendency is not always detected, but sometimes AKR develops as the storm proceeds.

The reason of this unexpected feature should be investigated through following three approaches.

1) Precipitating electrons

Precipitating particles during the magnetic storm may have the different distribution function with that of the usual substorm, and could not provide the free energy to generate AKR.

2) Plasma environment

The violent particle precipitation during the storm may disturb the environmental plasma condition in the source region of AKR.

2) AKR generation and /or propagation

The seeds of AKR could not grow or generated AKR could not propagate, due to the disturbed plasma distribution which may have the scale length less than the wavelength of AKR.