

GENERATION OF COUPLED MAGNETIC AND PARTICLE Pc5 PULSATIONS AT THE RECOVERY PHASE OF THE STRONG MAGNETIC STORMS

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The intense *Pc5* pulsations at the recovery phase of strong magnetic storms on November 21 2003, and October 31, 2003 are considered in detail. A global structure of disturbance is studied using data from a world-wide array of magnetometers and riometers augmented with data from particle detectors and magnetometers onboard the geosynchronous *GOES* and *LANL* satellites. The local spatial structure is examined using the Finnish riometer and *IMAGE* magnetometer arrays. The observed global *Pc5* oscillations are supposed to be a result of the *MHD* waveguide excitation at the dawn and dusk flanks of the magnetosphere. The magnetospheric *MHD* waveguide turns out to be in a meta-stable state under high solar wind velocities, and can be triggered by particle injection into the magnetosphere. Though a general similarity between the quasi-periodic magnetic and riometer variations is observed, their waveforms, spectral content, and local propagation patterns turn out to be different. The observational results may be interpreted not merely as modulation of particle fluxes by *Pc5* wave, but rather as a coupling between two oscillatory systems: *MHD* waveguide and the system turbulence + electrons.

Pc5 pulsations, riometer absorption, magnetic storm

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