

Compressional Pc5 waves associated with the modulation of lower-band chorus wave intensity in the deep inner magnetosphere

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We examined a compressional Pc5 wave observed by the Van Allen Probes satellites in the deep inner magnetosphere ($L \sim 4.4$ - 6.0) around noon near the magnetic equator during the storm recovery phase on 21 December 2015. The Pc5 wave with a wave period of ~ 250 s was excited by an arrival of a solar wind structure like a flux rope at the magnetopause at $\sim 21:20$ UT. The amplitudes were similar in the radial, azimuthal, and compressional components. When the solar wind dynamic pressure enhanced at $\sim 22:40$ UT, the Pc5 wave properties changed and the amplitude in the compressional component became dominant. Electron fluxes at 20-200 keV also oscillated in-phase with the magnetic field oscillation in the compressional component. Simultaneously, lower-band chorus waves were observed, and the wave intensity was modulated with the same period of the compressional Pc5 wave. In presentation, we show the detail results and discuss the Pc5 wave properties, the excitation mechanism of the waves, and the chorus wave modulations.