

ERG satellite observation of large amplitude Pc5 wave and the O⁺ drift-bounce resonance

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A large amplitude Pc5 wave is observed in the inner magnetosphere ($L \sim 5.5-6.0$) on 27 March 2017 by Magnetic Field Experiment (MGF) onboard the Exploration of energization and Radiation in Geospace 'ARASE' (ERG) satellite. The O⁺ flux oscillation in the energy range of 10-70 keV is also observed by Medium-Energy Particle Experiments - Ion Mass Analyzer (MEPi) with almost the same period of the Pc5 wave (about 600 s). Before the Pc5 wave was excited, the magnetic field is oscillating with the shorter period of 60-100 s. The start of the O⁺ flux oscillation coincides with the period change of the magnetic field oscillation. This Pc5 wave and the sudden variation of the wave period are also observed by MMS1 (Magnetospheric Multiscale satellite), which is located near ERG in this event. We will estimate the azimuthal wave structure of the Pc5 wave, using the magnetic field data from the ERG and MMS satellites. We suppose that the O⁺ flux oscillation is due to the drift-bounce resonance and is related to the sudden change of the wave period.