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## Data analysis of the causes of electrostatic solitary waves near the moon

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Bi-polar pulses called ESW (Electrostatic Solitary Wave) were observed near the Earth's magnetosphere such as bow-shock and magnetopause by GEOTAIL, WIND and other satellites. However, it is reported for the first time that ESWs were observed in the region on which the Earth's magnetosphere made influence by the Kaguya satellite.

Kaguya is the satellite, which was launched on September 14, 2007 by JAXA to explore the moon. Various observation equipments were loaded on Kaguya. PACE(Particle Angle and Composition Experiment), WFC-L(WaveForm Capture-L) and LMAG(Lunar MAGnetomter) measured flux of charged particles, electric waveform and magnetic field respectively.

In this study, we transform data of plasma particles by PACE into reduced distribution functions and analyze them with electric waveform data and magnetic field data. In the presentation, we report the relation between charged particles and the causes of the ESWs in the vicinity of the moon.

Keywords: Kaguya, plasma, ESW