

**R006-29**

**A 会場 : 11/27 PM1 (13:15-15:15)**

**15:00~15:15**

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## **Energy and pitch angle dispersed ion injections from the magnetotail during geomagnetic storms observed by Arase**

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During geomagnetic storms, energetic ions are injected from the Earth's magnetotail into the plasma sheet boundary layer (PSBL) and the inner magnetosphere. Owing to its off-equatorial, inclined orbit the Arase satellite is in the prime position to observe these injections in the PSBL on the nightside at apogee. Arase can also observe dispersions in pitch angle better than low-latitude satellites. There are two main ion sources into the PSBL: low-energy ( $< 1$  keV) ionospheric outflow and high-energy ( $> 5$  keV) injections. The injections are observed as energy and pitch angle dispersed features in the Arase LEP-i and MEP-i data. H<sup>+</sup> dispersions are common, but O<sup>+</sup> dispersions are predominantly seen during storm times. The energy dispersion can be used to estimate the location and timing of the ion injections, by deriving the inversed velocity distribution and fitting the identified dispersion features. Our study of dispersed structures during storms shows that distances to the injection location range from  $\sim 20$  to 40 Earth radii, which is in agreement with the expected origin in the near-Earth neutral line. We will discuss the correspondence between H<sup>+</sup> and O<sup>+</sup> dispersions and injections, and the association with concurrent plasma waves and ion outflow in the PSBL. We will also study the effect of injections on the plasma sheet ion composition.