

**R006-18**

**Zoom meeting B : 11/1 PM2 (15:45-18:15)**

**16:15~16:30**

## **The interaction of sub-relativistic electrons with high-latitude propagating chorus waves observed by the Arase satellite**

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This study addresses the wave-particle interactions between sub-relativistic electrons and plasma waves at high latitudes by examining the direct measurements made by the Arase satellite. Past studies suggest that whistler-mode chorus waves propagating along the magnetic field lines toward higher latitudes cause precipitation of electrons over a wide energy range from a few keV to several MeV, leading to sub-relativistic/relativistic electron microbursts [e.g., Miyoshi 2020]. However, no direct observational evidence has been obtained so far.

We analyzed data obtained by the HEP [Mitani et al., 2018] and PWE [Kasahara et al., 2018] instruments onboard the Arase satellite [Miyoshi et al., 2018] and found several events in which electrons of several hundreds of keV traveling in the direction of the magnetic field lines show similar fluctuations to those in the wave intensity. In particular, for the event on September 26, 2019, significant sub-relativistic electron flux variations in the direction of the magnetic field lines corresponding to the wave fluctuations were observed at 40 degrees in magnetic latitude. These results may indicate direct observational evidence of the interaction between sub-relativistic electrons and chorus waves at high latitudes, although rigorous verification still needs to be done to prove this with statistical significance.