

**R006-06**

**Zoom meeting B : 11/1 AM2 (10:45-12:30)**

**11:00~11:15**

## **Relationship between the cusp ion precipitation from lobe reconnection and the magnetosheath flow**

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Lobe reconnection occurs in the presence of tailward magnetosheath flow which is parallel to the high-latitude magnetopause. How the parallel flow is related to the reconnection process is still unclear. The purpose of this study is to understand this relationship through the statistical analysis of the lobe reconnection events identified in the low-altitude cusp. Lobe reconnection allows the magnetosheath ions to precipitate directly into the cusp. We examined precipitating particle data obtained in the low-altitude cusp by DMSP F16, F17, and F18. We introduced a method of automated event identification to the data obtained for 11 years, and took the cusp ion events in more than 1800 satellite orbits from the data obtained during stably northward IMF periods. The events were identified at latitudes higher than 78 MLAT, and the MLT distribution of the events clearly showed the well-known IMF By-dependence. The result of the statistical analysis has shown that the total number flux of the precipitating ions in the cusp tends to increase with the increase of the magnetosheath flow speed as well as the magnetosheath number density. The result has also revealed that the average energy of the precipitating ions in the cusp tends to be higher as the magnetosheath flow is faster. These strongly suggest that the parallel magnetosheath flow acts in the reconnection process in such a manner that the ion outflow jet from the reconnection can be enhanced. We discuss this relationship in terms of the enhancement of the Hall electric field in the ion diffusion region of the reconnection.