

## On energy-dispersed ion signatures observed in the central plasma sheet by GEOTAIL

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Energy-dispersed ion signatures are frequently observed in the magnetosphere by GEOTAIL spacecraft. In this study we focus on the ion dispersion signatures seen in the night-side central plasma sheet. As preliminary analysis 7-day GEOTAIL data where 429 recurrent ion dispersions occurred in the central plasma sheet were selected for statistical analysis of the dispersive ions. The dispersions are mainly field-aligned, can be categorized into two types by their features in the phase-space distributions; one has higher energies and wide pitch angles, while the other has lower energies, narrow pitch angles, flowing in the tailward direction. This suggests that the dispersive ions came from not only the weak magnetic field region in the magnetotail but also from the ionosphere. Calculations of the flight path lengths of the narrow pitch-angle dispersions also support this suggestion. Another result indicated by the analysis is that acceleration of the ionospheric-like ions is delayed for several minutes from generation of the tail-origin ions. This may show propagation of magnetospheric disturbances into the ionosphere.