Comparison between particle structures observed at auroral altitudes and in the magnetosphere

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In this study, we compare the Geotail data observed in the near-Earth (9-30 Re) magnetosphere near the equator and the Akebono data obtained at low altitudes (300-10,000 km). Since particle structures identified at high and low altitudes can be utilized as tracers for mapping of auroral regions to the magnetospheric equator, we have examined the particle data of these satellites and found three kinds of particle structures in the Geotail and the Akebono data. One of them is an ion structure which we call the Near-Earth Plasma Sheet Boundary (NEPSB). The purpose of this paper is to examine plasma and magnetic field data obtained near the NEPSB and present a model for mapping of auroral regions to the magnetosphere using these structures.