



The Properties of FAC Observed by Cluster in Plasmasheet Boundary Layer

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The Magnetosphere-Ionosphere Coupling is important to study the mechanism of the Geo-space Storm and the Field Aligned Current (FAC) is important for the M-I coupling. In this study, the FAC is investigated by analyzing the data obtained by 4 satellites of Cluster in 2001. There are 173 FAC cases/events in the magnetosheet boundary layer chosen for the statistics. The results shows that (1) the FAC is asymmetry in the tail versus coordinate Y, (2) the FAC is mainly Earthward on dawn section and is mainly tailward on dusk section, (3) the current intensity of the tailward is great than that of the Earthward, and the current intensity of the dawn sector is great than that of the dusk sector, (4) there are more FAC events found when $AE < 500$ than that when $AE > 500$, (5) the current intensity is bigger when AE with a value of 500-1000 than that when AE with a value of others.