

Field-Aligned Currents in the Near-Earth Magnetotail

이 동 훈

경희대학교 우주과학과

Sudden brightening of aurora occurs at an early phase of substorm onset. Such auroral enhancements are strongly associated with parallel currents or shear Alfvén waves. With MHD wave equations, we investigate the generation of field-aligned currents near the equatorial region of the inner magnetotail, at the boundary between cold and hot plasmas. Our results show that strong localized shear Alfvén waves are excited near this boundary via mode conversion when compressional input is assumed. We suggest that this boundary region is strongly associated with the auroral location.