

## Generation of Field-Aligned Currents at the Plasmasheet Boundary Layer

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In the plasma sheet boundary layer, the plasma density and the Alfvén speed undergo significant variations in order to satisfy the total pressure balance. The inhomogeneity of the plasma pressure and magnetic pressure becomes significant near the plasma sheet boundary layer. We have developed a new three-dimensional MHD wave model that allows for finite plasma pressure. We present the initial results from this numerical model for MHD wave propagation in hot plasmas. Based on this time-dependent model, we study the excitation of ULF modes in the magnetotail. We examine how both shear and fast modes are affected by the plasmasheet and lobe structure. Our results show that localized field-aligned currents are strongly excited at the boundary between the plasmasheet and its surrounding regions.