



Electron-scale structures inside and at the magnetopause

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Field-aligned electron-scale structures have been observed in the boundary layer on the magnetospheric side of the magnetopause. Whistler waves are emitted from these structures. The small regions are most probably related to large-scale energy conversion and transport processes. An obvious candidate is magnetic reconnection at the magnetopause. We describe the detailed properties of the current structures, such as the perpendicular size, the field-aligned extension, electric and magnetic signatures and associated particle distributions. We also investigate how common these structures are and how their properties are related to global parameters including the interplanetary magnetic field.