



Loss of energetic particles from the Earth's Magnetosphere

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Multi-spacecraft observations are used to monitor the physical processes through which energetic particles are lost through the magnetopause. A number of studies have observed a layer of energetic particles, both ions and electrons, along or just outside the Earth's magnetopause. The properties of these particles indicate that they are originating from inside the magnetosphere. Multi-spacecraft measurements from the Cluster and THEMIS missions are used to determine the processes through which these particles are being lost through the magnetopause boundary at both high and lower latitudes. Understanding the efficiency of loss mechanisms such as reconnection, magnetopause shadowing, and diffusion allows one to quantify these losses and improve magnetospheric and radiation belt models.