



## **The terrestrial magnetopause - an asymmetric boundary**

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The terrestrial magnetopause marks the boundary between the geomagnetic field on one side and the decelerated solar wind with its embedded interplanetary magnetic field on the other side. It is thus a key region for the transfer of mass and momentum from the solar wind into the magnetosphere. In this paper, we report observations of magnetopause characteristics based on more than 15000 individual magnetopause crossings by the Cluster mission. The results show that both thickness, velocity and current density and current profile of the flank magnetopause can vary greatly from crossing to crossing, mainly due to internal structures such as magnetic islands and undulations. Overall, however, there is a persistent dawn-dusk asymmetry with a thinner current sheet and higher current density on dusk than on dawn. The asymmetry becomes more pronounced during active geomagnetic conditions. Possible reasons for this asymmetry and behavior is discussed.