



Inverse magnetic field gradient across the magnetopause: Multipoint study

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The magnetopause is a layer where the pressure of the magnetospheric magnetic field balances with the magnetosheath one (a sum of thermal and magnetic pressures). However, statistics of THEMIS magnetopause crossings has shown that about 1 % of them exhibit a larger magnetic field in the magnetosheath than in the magnetosphere. These crossings seem to appear predominantly on the flanks under a southward IMF during disturbed magnetospheric conditions. In the study, we accompanied THEMIS crossings with nearly simultaneously observed crossings by other spacecraft (Cluster, MMS) and by the spacecraft within the magnetosphere on the day/night side together with geomagnetic indices to monitor a possible response of a whole magnetosphere. We provide a small statistical study of both types of crossings and compare them with empirical magnetopause models.