

Magnetospheric field reduction in response to the solar wind dynamic pressure increase

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High-time resolution magnetic field observations at GOES and Polar satellites have been used to investigate the magnetospheric response to sudden changes in the solar wind dynamic pressure (Psw). Over much of the magnetosphere, the magnetic field strength is enhanced when the Psw increases, as seen in ground-based magnetometer data at low latitudes. In some cases, however, the Psw increases can lead to sudden reductions in the magnetic field strength. The decrease in the magnetic field strength starts almost at the same time as a passage of the fast mode wave. In this study, we present preliminary results of some Psw-induced magnetic field reduction events and discuss the generation mechanism.