



Double Layers Throughout the Magnetosphere and Their Relation to Magnetic Reconnection

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Observations throughout the terrestrial magnetosphere have shown large-amplitude parallel electric field signatures in regions of strong magnetic turbulence. Debye-length, unipolar parallel electric fields identified as double layers have consistently been observed in regions such as the auroral acceleration region, near-Earth plasmasheet, and in the terrestrial bow shock. Double layers have been theorized to be a dissipation mechanism for magnetic turbulence. Recent observations from MMS have suggested that double layers can act as a signature of secondary magnetic reconnection, particularly in the Earth's magnetopause. We present a comparative study of double layer signatures in various regions of the Earth's magnetosphere to determine the relationship between secondary magnetic reconnection and turbulent dissipation.