Discontinuity Analysis of the Leading Switchback Transition Regions

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Switchback BR signatures
663 candidate events

↓

Data quality criteria
322 candidate events

↓

MVA robustness
273 candidate disc.

↓

Rotational disc. (RD)
214 candidates (78%)

Why, even though **theoretically favored**, reconnection is **absent** in the leading switchback transition regions?

a) The region is much **thicker than the kinetic scales required for reconnection onset** (Phan+, 2021)

b1) Magnetic **curvature is negligible** (many orders of magnitude smaller than reconnecting current sheets observed by MMS)

b2) **74%** of the leading RD-type switchback transition regions are characterized as having **"bad" curvature**

→ do plasma instabilities explain the observed 30%+ jump in Tp?



