

Ulysses (Type IV) Interplanetary Discontinuities and their Consequences

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Type IV discontinuities are those with large field magnitude changes and large field components along the normal. Such discontinuities are found to comprise a significant fraction of all discontinuities detected at high heliographic latitudes. These Type IV and tangential (Type II) discontinuities often bound large field decrease (MD) regions which can affect energetic charged particle trajectories. We determine the statistical properties of the MDs and develop a Monte Carlo model to determine the cross-field diffusion rate of ~MeV protons.