2005 Fall Meeting
Search Results

Cite abstracts as **Author(s) (2005), Title, *Eos Trans. AGU, 86*(52), Fall Meet. Suppl., Abstract xxxxx-xx**

Your query was: **au="NG, C"**

HR: 11:35h
AN: **SM12A-06**
TI: Impulsive Collisionless Magnetic Reconnection In Laboratory and Space Plasmas
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AB: Impulsive reconnection dynamics is characterized not only by fast growth, but a sudden change in the time-derivative of the growth rate. Examples of such phenomena are substorms in the Earth's magnetotail, impulsive solar flares, and sawtooth oscillations in laboratory fusion plasmas. We demonstrate that all of these phenomena can be viewed from a common perspective based on the two-fluid or Hall MHD equations. We will present new results, based on asymptotic analysis and high-resolution simulations, demonstrating in each instance that either the Hall current or the electron pressure gradient term in the generalized Ohm's law can give an explanation for a trigger whereby the derivative of the reconnection rate changes suddenly. We obtain the scaling dependencies of the reconnection rates on the plasma parameters and the system size, and compare our results with observations.
DE: 7835 Magnetic reconnection (2723, 7526)
SC: SPA-Magnetospheric Physics [SM]
MN: Fall Meeting 2005

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