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On the question of hysteresis in Hall MHD Reconnection[1] BRIAN SULLIVAN, AMITAVA BHATTACHARJEE, YI-MIN HUANG, The Center for Integrated Computation and Analysis of Reconnection and Turbulence (CICART), University of New Hampshire — Recently, questions have been raised regarding the cause of hysteresis, or bi-stability, of solutions to the equations that govern the geometry of the reconnection region in Hall magnetohydrodynamic (MHD) systems. This poster presents a comparison of the frameworks within which this controversy has arisen and illustrates that the Hall MHD hysteresis originally discovered numerically by Cassak *et al.*[Phys. Rev. Lett. 95, 235002 (2005)] is, in fact, a different phenomenon from that recently reported by Zocco *et al.* on the basis of analysis and simulations in electron MHD with finite electron inertia. [Phys. Plasmas 16, 110703 (2009)] We demonstrate that the analytic prediction of hysteresis in EMHD does not describe or explain the hysteresis originally reported in Hall MHD, which is shown to persist even in the absence of electron inertia.

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