

Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Numerical studies of non-axisymmetric magnetorotational instability in MPCX DARRIN LEER, F. EBRAHIMI, B. LEFEBVRE, Space Science Center, University of New Hampshire — The linear global behavior of non-axisymmetric magnetorotational instability (MRI) is numerically studied in the MPCX (Madison Plasma Couette Flow Experiment). Here, we extend an earlier study of global axisymmetric MRI in MPCX (Ebrahimi et. al 2011) to also include non-axisymmetric modes. The global eigenvalue problem for ideal MHD is numerically solved in a compressible flowing plasma. In a Couette geometry with an imposed vertical magnetic field, we study the role of compressibility on both axisymmetric and non-axisymmetric MRI modes and compare the global solutions with a generalized form of the local WKB approximation. Supported by NSF PHY #0962244 and DOE.

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Date submitted: 16 Jul 2012

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