

Abstract Submitted
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Global Magneto-Rotational Instability (MRI) in Hall MHD
JESSE PINO¹, SWADESH MAHAJAN, IFS, U. Texas at Austin, VINOD KRISHAN, Graduate School of Frontier Sciences, The University of Tokyo, PARVEZ GUZDAR, U. Maryland — We derive the radial eigenmode equation for the linear (thin accretion disk) MRI within the framework of Hall Magnetohydrodynamics (HMHD). Eigenmodes are computed with a finite-differencing method, and the stability of these are compared to global MHD modes as well as the local approximation. In both MHD and HMHD the local analysis can give misleading conditions for instability as well as for the scaling of the frequency. In general the Hall current is stabilizing, however, parameter regimes exist where the Hall current can have a destabilizing effect.

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