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**A Plasma, Magnetorotational Instability Experiment** C. COLLINS, C.B. FOREST, R. KENDRICK, University of Wisconsin, Madison, A. SELTZMAN, NUF, Georgia Institute of Technology — A new experiment is underway at the University of Wisconsin to investigate the magnetorotational instability in a plasma. Magnetorotational instability (MRI) is a likely mechanism that could account for the observed accretion rates in astrophysical objects. The instability occurs when a weak magnetic field is present, so that tension in perturbed field lines transfers angular momentum outward while mass moves towards the center. In the Plasma Dynamo Experiment Prototype, a cylindrical, axisymmetric, ring cusp confinement geometry is used to produce a large unmagnetized plasma, confined by a highly localized magnetic field at the plasma boundary. The plasma is stirred by a novel axisymmetric electrode set that can control the rotation (angular momentum profile). The feasibility of observing the MRI will be discussed and initial results from a prototype experiment will be presented.

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