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Rotation Generation in Helicon Plasmas BRANDON FETROE, Walla Walla University, JENNA KEFELI, Stuyvesant High School, HANTAO JI, Princeton Plasma Physics Laboratory, JILL FOLEY, Nova Photonics, YEVGENY RAITSES, Princeton Plasma Physics Laboratory — Angular momentum transport in accretion discs occurs significantly faster than predicted by classical viscosity. Magnetorotational instability (MRI) is proposed to generate the required turbulence necessary to enhance angular momentum transport. However, the physics of MRI is studied mostly by theory and simulation. Recently, study of MRI is beginning using liquid metal. In order to study MRI in plasmas, controlled rotation must first be generated. Radial DC current is a means for generating jxB torque when an axial magnetic field is applied. To accomplish this initial goal, two concentric cylindrical electrodes were designed, built, and will be inserted into helicon plasma. The radial profiles of both velocity and electron density will be obtained by Mach and Langmuir probes, and if available, initial results will be reported on the search for MRI.

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