

Abstract Submitted
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Dipole Experiment with Magnetically Isolated Supports¹ P. MONTAG, J. EGEDAL, A. VRUBLEVSKIS, A. LE, MIT, W. FOX, UNH — Basics plasma physics experiments in the collisionless regimes require good plasma confinement to permit temperatures and densities in the range of $T_e \sim 30$ eV, $n \sim 1 \cdot 10^{19}$ m⁻³. Our design for a new magnetic reconnection experiment is based on the confinement of the dipole geometry which has also been considered for fusion applications (e.i. the LDX experiment at MIT). Rather than magnetic levitation as applied in the LDX experiment, we use magnetically isolated supports. This magnetic isolation is achieved by applying currents in the support structures configuring the magnetic field such that the plasma cannot stream directly to the support along magnetic field lines. We here report on the first magnetic and electrostatic measurements in this dipole configuration.

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