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**Axial Magnetic Field Compression within Radial Foil Plasma Jets, Experiment and Simulation** TOM BYVANK, WILLIAM POTTER, JAE YOUNG CHANG, JACOB BANASEK, JOHN GREENLY, CHARLES SEYLER, BRUCE KUSSE, Cornell University — Compression of an axial magnetic field correlates with density hollowing and azimuthal rotation of a plasma jet generated by the COBRA pulsed power machine (1 MA peak current in 100 ns rise time) in a radial foil (15 $\mu$m Al thin disk) configuration. The plasma jet compresses an external 1 T axial magnetic field (Bz) as it collimates along the central z-axis. Experimental measurements use a Bdot magnetic probe placed in the center of the hollow plasma jet. Experimental results show compression of the 1 T Bz field to 2.4 +/- 0.3 T. Predictions made by the extended magnetohydrodynamics (XMHD) code, PERSEUS, show a 5.0 +/- 0.7 T field at the probe location. We overview physical reasons for the discrepancy between the experimental and simulation magnetic field compression measurements.

Tom Byvank
Cornell University

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