

Abstract Submitted  
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**Measurements of Global Dynamics and Shock Structures in Centimeter-Scale Plasma Jets and Bubbles\***<sup>1</sup> R. H. DWYER, N. HINES, M. GILMORE, University of New Mexico — Recent experiments on PBEX (Plasma Bubble Expansion eXperiment), conducted at the University of New Mexico's Hel-Cat (Helicon-Cathode) linear plasma device, have focused on studying the global dynamics, as well as fluid instabilities in plasma jets and bubbles. These plasmas, which exist on centimeter spatial scales and microsecond timescales, can be launched into steady-state background magnetic fields and magnetized plasmas, which cause stabilization of the kink instabilities in the jets, and the formation of Magneto-Rayleigh Taylor instabilities as well as double shock structures and the leading edge of the plasma bubble. Additionally, two-dimensional magnetized shock structures are being studied at the intersection of supersonic plasma jets with solid magnetized objects. Experiment setup and measurements using fast framing cameras and magnetic probes to study the dynamics of the bubbles and jets will be presented.

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