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Single Jet Studies on the Plasma Liner Experiment THOMAS AWE, SCOTT HSU, COLIN ADAMS, JOSHUA DAVIS, JOHN DUNN, JACOB SCHWARTZ, Los Alamos National Laboratory, ELIZABETH MERRITT, ALAN LYNN, MARK GILMORE, University of New Mexico, F. DOUGLAS WITHERSPOON, SAM BROCKINGTON, DAVID VAN DOREN, HyperV Technologies, LOS ALAMOS NATION LABORATORY TEAM, UNIVERSITY OF NEW MEXICO TEAM, HYPERV TECHNOLOGIES TEAM — The Plasma Liner Experiment (PLX) will generate imploding plasma liners via an array of high-Mach-number (M) plasma jets. Initial experiments examine the evolution of an argon plasma jet with velocity ∼50-70 km/s, number density $\sim 10^{16-17}$ cm^{-3}, M >10, cross sectional radius ∼2.5 cm. Single-jet physics issues include jet expansion/stability, cooling, and atomic physics effects. Photodiode data determine the jet velocity. Intensified gated imaging details the jet geometry, expansion, and stability. A gated broadband visible light spectrometer provides information on the plasma temperature and ionization state and will inform the design of a high-resolution spectrometer for future experiments. Finally, a multi-chord interferometer provides temporally resolved line-integrated density data and potentially Abel-inverted jet radial density profiles. A collaborative modeling effort is underway to generate simulated data based on experimental jet parameters and diagnostic configurations. Experimental data and comparisons with simulated data are presented.

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