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Interferometry Results from Single Jet and Two Jet Merging Experiments on PLX[1] MARK GILMORE, ELIZABETH MERRITT, ALAN LYNN, University of New Mexico, ANNA MOSER, SCOTT HSU, Los Alamos National Laboratory, THE PLX TEAM — The Plasma Liner Experiment (PLX) is exploring single jet propagation and two jet merging of supersonic plasma jets in support of forming HED and potentially MIF-relevant imploding spherical "plasma liners" that can reach peak pressures $\sim$ 0.1-1 Mbar at stagnation. A novel 8 chord interferometer using a 561 nm diode-pumped solid state laser is being used to make time-resolved density profile measurements of the plasma jets. The interferometer phase shift is sensitive to electron, ion, and neutral atoms and thus is dependent on both plasma ionization fraction, f, and total atomic density. For argon jets both positive and negative phase shifts have been observed, where the sign of the phase shift bounds the value f in the jet. Interferometry measurements coupled with spectroscopy and synthetic diagnostic data have allowed us to infer key physics such as plasma density range (10^{16} – 10^{17} cm^{-3}), jet propagation velocity ($\sim$50 km/s), and radial and axial expansion. This poster will cover results from both single jet propagation and two jet merging experiments.

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