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Interferometry Results from Initial Experiments on the Plasma Liner Experiment (PLX) ELIZABETH MERRITT, ALAN LYNN, MARK GILMORE, The University of New Mexico, SCOTT HSU, Los Alamos National Laboratory, THE PLX TEAM — The Plasma Liner Experiment (PLX) is exploring and demonstrating the feasibility of forming HED and potentially MIF relevant imploding spherical “plasma liners” that can reach peak pressures ~ 0.1 Mbar at stagnation. Liners will be formed via merging of 30 dense, high Mach number plasma jets ($M \sim 10$ -35, $v \sim 50$ km/s, jet diameter ~ 5 cm) in spherically convergent geometry. Determining n_e during liner formation, convergence, and stagnation, in comparison to simulation, is imperative for understanding the underlying plasma dynamics and for optimizing the liner formation and implosion. Simulations predict a wide parameter range for n_e over the liner evolution, from densities of 10^{22} - 10^{26} m^{-3} . A primary density diagnostic is an 8-chord, fiber-optic, heterodyne, 561 nm interferometer. This poster overviews the interferometer design, and will present results from initial experiments including single jet propagation and two jet merging.

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