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The PLX-α Project: Progress and Plans[1] S. HSU, LANL, F. D. WITHERSPOON, HyperV Technologies Corp., J. CASSIBRY, UAH, M. GILMORE, UNM, R. SAMULYAK, BNL, P. STOLTZ, Tech-X Corporation, AND THE PLX-α TEAM — The Plasma Liner Experiment-ALPHA (PLX-α) project aims to demonstrate the viability of spherically imploding plasma liners as a stand-off driver for plasma-jet-driven magneto-inertial fusion (PJMIF) [Hsu et al., IEEE Trans. Plasma Sci. **40**, 1287 (2012)]. In the past year, progress has been made in designing and testing new contoured-gap coaxial guns, 3D model development and simulations (via Eulerian and Lagrangian hydrocodes) of PLX-α-relevant plasma-liner formation/implosion via up to 60 plasma jets ($\sim$ 100 kJ of liner kinetic energy), 1D semi-analytic and numerical modeling of reactor-scale PJMIF (10s of MJ of liner kinetic energy), and preparation/upgrade of the PLX facility/diagnostics. The design goal for the coaxial guns is to form plasma jets of up to initial $n \sim 2\times10^{16}$ cm^{-3}, mass $\approx$ 5 mg, $V_{jet} \approx$ 50 km/s, $r_{jet} = 4$ cm, and length $\approx$ 10 cm. The modeling research is assessing ram-pressure amplification and Mach-number degradation during liner convergence, evolution of liner non-uniformity amplitude and mode number, and exploration of PJMIF configurations with promising 1D and 2D fusion gains. Conical multi-jet-merging and full-4π experiments will commence in Fall, 2016 and late 2017, respectively.

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