

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Flux amplification in SSPX¹ LYNDA LODESTRO, E.B. HOOPER, R.J. JAYAKUMAR, L.D. PEARLSTEIN, R.D. WOOD, H.S. MCLEAN, LLNL, SSPX TEAM — Flux amplification—the ratio of poloidal flux enclosed between the magnetic and geometric axes to that between the separatrix and the geometric axis—is a key measure of efficiency for edge-current-driven spheromaks. With the new, modular capacitor bank, permitting flexible programming of the gun current, studies of flux amplification under various drive scenarios can be performed. Analysis of recent results of pulsed operation with the new bank finds an efficiency ~ 0.2 , in selected shots, of the conversion of gun energy to confined magnetic energy during the pulses, and suggests a route toward sustained efficiency at 0.2. Results of experiments, a model calculation of field build-up, and NIMROD simulations exploring this newly suggested scenario will be presented.

¹Work performed under the auspices of the US DOE by University of California Lawrence Livermore National Laboratory under contract W-7405-ENG-48.

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Date submitted: 24 Jul 2007

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