

Abstract Submitted
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Physics Results from the LTX- β Magnetics Upgrade¹ P.E. HUGHES, Princeton Plasma Physics Laboratory, C. HANSEN, Department of Aeronautics Astronautics, University of Washington, F. SCOTTI, Lawrence Livermore National Laboratory, D.P. BOYLE, R. MAJESKI, PPPL — Lithium Tokamak eXperiment–Beta (LTX- β) has begun operating with increased magnetic fields, lithiated walls, and neutral beam core-fueling, allowing a new series of experiments into the low-recycling, high-performance regime previously observed in LTX [D.P. Boyle *et al. PRL* July 2017]. Using the upgraded magnetic diagnostic suite [P.E. Hughes *et al. RSI* Oct. 2018], we investigate the effect of the neutral beam on stored energy, plasma β , and MHD instability drive, and compare against previously observed LTX performance. Analysis techniques are explored to identify $n \leq 5$ and $m \leq 10$ MHD activity on the TA and REPA, and the SESA is studied for comparison to the eigenmode modeling of predicted shell eddy currents. Reconstructions in the PSI-Tri equilibrium code [C. Hansen *et al. PoP* Apr. 2017], employing the full upgraded magnetic diagnostics suite now including a newly compensated diamagnetic loop, are compared against fast camera data and prior LTX reconstructions.

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