Abstract Submitted
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Overview of Upgrades to the Lithium Tokamak Experiment, LTX-β[1] D.P. BOYLE, R.E. BELL, P.E. HUGHES, R. KAITA, R. MAJESKI, X. ZHANG, PPPL, T.M BIEWER, J.M. CANIK, D.B. ELLIOTT, M.L. REINKE, ORNL, C. HANSEN, U Washington, S. KUBOTA, UCLA, F. SCOTTI, V.A. SOUKHANOVSKII, LLNL, D. DONOVAN, A. MAAN, UT Knoxville — Exploration of the low-recycling regime at higher plasma performance and with key parameters closer to equilibrium motivated extensive upgrades to the Lithium Tokamak Experiment, now LTX-β. The toroidal field, plasma current, and discharge length will approximately double. The addition of a neutral beam will increase plasma heating by a factor of ˜5 and also provide core fueling, enabling constant density in low-recycling conditions without edge fueling. Between-shot lithium evaporation, Li granule injection during discharges, and improved vacuum systems will allow expanded studies into the effects of surface conditions on recycling and performance. The Thomson scattering system will have increased spatial coverage and resolution. New baffles, polychromators, and an intensified camera will also reduce background and increase sensitivity at low density. Planned diagnostic upgrades also include tangential AXUV diode arrays for recycling and radiated power measurements, an additional resistive bolometer array, high- and low-field side Langmuir probes, and enhancements to VUV spectroscopy and fast camera diagnostics. A description and status of these upgrades and diagnostics, with first plasma planned for October 2017 and neutral beam operations in February 2018, will be presented.

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