

Abstract Submitted
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The Lithium Tokamak eXperiment - Upgrade (LTX-U)¹ R. MAJESKI, R. BELL, D. BOYLE, A. DIALLO, R. KAITA, T. KOZUB, B. LEBLANC, M. LUCIA, E. MERINO, J.C. SCHMITT, PPPL, T.M. BIEWER, T.K. GRAY, ORNL, S. KUBOTA, W.A. PEEBLES, UCLA, C. HANSEN, T. JARBOE, U. Washington, J. BIALEK, Columbia U., B. KOEL, Princeton U., P. BEIERSDORFER, K. WIDMAN, LLNL, K. TRITZ, JHU — Results from the LTX program during the last 18 months have significantly advanced the concept of the liquid lithium-walled tokamak. These results include energy confinement times in an ohmic, wall-limited tokamak which exceed ITER ELMy H-mode scaling by a factor of 2-4, the development of very flat electron temperature profiles, and measurements of lithium concentrations in the core which are less than 0.5%, with a full liquid lithium wall. Although considerable investigation of ohmically heated discharges remains, the results strongly support an extension to regimes with strong auxiliary heating, in order to better determine whether liquid lithium walls should be deployed in a large confinement device. A widened operational window, in both toroidal field and plasma current, is also advisable, as well as eventual operation in diverted geometry. An upgrade of LTX, imaginatively named LTX-U, has been proposed. The upgraded device will be described. The results which form the basis for this next step will be briefly summarized.

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