

Abstract Submitted
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Passive CHERS measurements in the Lithium Tokamak Experiment (LTX)¹ D.P. BOYLE, Princeton Plasma Physics Laboratory, T.M. BIEWER, T.K. GRAY, R. MAINGI, Oak Ridge National Laboratory, R. KAITA, R. MAJESKI, PPPL — The Lithium Tokamak Experiment (LTX) is designed to achieve low-recycling and reduced edge neutral density. This is predicted to significantly improve plasma momentum and ion energy confinement by reducing drag and energy losses due to charge exchange on edge neutrals. In order to measure the ion profiles, a charge exchange recombination spectroscopy (CHERS) diagnostic is undergoing a staged implementation on LTX. Initial passive toroidal and poloidal measurements have been made in discharges with solid lithium wall coatings, and toroidal line of sight measurements of ion temperature $T_i \approx 70$ eV and toroidal rotation $v_{tor} \approx 45$ km/s have been presented [1]. Analysis of the toroidal and poloidal measurements from additional discharges will be presented, including experiments with liquid lithium surfaces and measurements with higher spatial resolution toroidal optics. We will also present plans for a diagnostic neutral beam and further upgrades to the toroidal and poloidal views for both active and passive CHERS in 2013.

[1] T.K. Gray, et al. Rev. Sci. Instrum. (submitted 2012).

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