

Abstract Submitted
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First Electron Temperature Profile Measurements on the Lithium Tokamak Experiment¹ C.M. JACOBSON, R. KAITA, B.P. LEBLANC, R. MAJESKI, PPPL, Q. ZANG, ASIPP — The Lithium Tokamak Experiment (LTX) is a spherical tokamak designed to study the low-recycling regime through the use of a liquid-lithium coated shell conformal to the last closed flux surface. A low recycling rate is expected to flatten core electron temperature profiles, raise edge temperatures, and strongly affect electron density profiles. A Thomson scattering diagnostic uses a 15 J, 30 ns FWHM pulsed ruby laser (694.3 nm) to measure T_e and n_e at 9 radial points on the horizontal midplane, spaced from the plasma axis to the edge at a single temporal point for each discharge, with two background light channels. Scattered light is imaged through a spectrometer into an intensified CCD. T_e values have been observed from 50 to 150 eV. T_e and n_e profiles under various wall conditions are presented. Calibrated n_e and P_e profiles are used to constrain equilibrium reconstructions. Details and progress regarding an upcoming 5 channel, 5 mm resolution edge polychromator system are presented.

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