

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

The Lithium Tokamak Experiment Thomson Scattering Diagnostic¹ C.M. JACOBSON, R. KAITA, B.P. LEBLANC, R. MAJESKI, T. STRICKLER, Princeton Plasma Physics Laboratory — 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 is used to measure radial T_e and n_e profiles. The system uses a 15 J, 30 ns pulsed ruby laser and measures profiles of up to 16 radial points on the horizontal midplane at a single temporal point for each discharge. Scattered light is imaged through a spectrometer into an intensified CCD. Two transmission gratings are available for the spectrometer to increase temperature range. In order to protect optical windows from becoming coated with lithium, the system uses automated shutters and gate valves.

¹Supported by US DOE contract #DE-AC02-09CH11466.

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Date submitted: 17 Jul 2009

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