Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

Diagnostic Overview of the Lithium Tokamak Experiment (LTX)[1]

T.K. GRAY, T.M. BIEWER, J.M. CANIK, ORNL, R.E. BELL, D.P. BOYLE, A. DIALLO, E. GRANDSTEDT, C.M. JAOCBSON, R. KAITA, T. KOZUB, B. LEBLANC, M. LUCIA, R. MAINGI, E. MERINO, R. MAJESKI, J.C. SCHMITT, PPPL, S. KUBOTA, W.A. PEEBLES, UCLA, P. BEIERSDORFER, J.H.T. CLEMENTSON, A.G. MCLEAN, K. WIDMANN, LLNL, K. TRITZ, JHU, J.P. ALLAIN, F. BEDOYA, UIUC — The Lithium Tokamak Experiment (LTX) is a low aspect ratio tokamak with a conformal low recycling first wall. The first wall is comprised of four stainless steel-lined copper shells, heatable to 300C, onto which lithium is evaporated. The magnetic diagnostic suite has recently been upgraded to be more compatible with high temperatures and the lithium environment. A Thomson scattering system with new edge channels measures radial profiles of ne and Te. While Doppler spectroscopy is used to measure the ion temperature and speed of carbon and lithium impurities. Two 20 AXUV-diode arrays, 1 filtered for Ly-alpha and the other for bolometry, provide full radial coverage at the toroidal midplane, while a XUV spectrometer provides measurements of core impurities. The Materials Analysis and Particle Probe (MAPP) provided crucial information about the surface conditions of the plasma-facing wall between shots. Measurements of the edge plasma are accomplished with filterscopes, visible spectrometers, Langmuir probes and a fast framing, filtered tangential camera.

[1]This work was supported by DoE Contracts DE-AC05-00OR22725, DE-AC52-07NA27344 and DE-AC02-09CH11466.

Travis Gray
Oak Ridge National Laboratory

Date submitted: 11 Jul 2014 Electronic form version 1.4