Abstract Submitted
for the DAMOP10 Meeting of
The American Physical Society

Modeling Of Low-Z Plasma Spectroscopy Results from NSTX and Compact "Sparky" Plasma Facilities P. COX, A. SAFRONOVA, V. KANTSYREV, A. ESAULOV, U. SAFRONOVA, K. WILLIAMSON, M. WELLER, UNR, NV, J. LEPSON, SSL, Berkley, CA, P. BEIERSDORFER, LLNL, CA — New non-LTE kinetic models of Li and B as well as previously developed and applied models of C and O, updated now with more high-Rydberg states, have been utilized in the modeling of recent experimental spectra from NSTX and compact laser plasma facility "Sparky". Emphasis was placed on the examination of EUV and soft x-ray Oxygen and Carbon spectra from both devices. In addition, Lithium and Boron lines from NSTX spectra were identified and used for benchmarking of corresponding kinetic models. The considered NSTX spectra cover the spectral range from 20 Å to 200 Å, where OVI and OV are the most dominant Oxygen ionization stages. Also, the most intense lines from He-like ions of C and H-like B ions in the soft X-ray region in first order of reflection have been observed. Prominent carbon and oxygen features from NSTX Tokamak experimental spectra were compared with those from "Sparky" and the most diagnostically significant temperature and density sensitive lines identified for use as future diagnostic tools. Research supported by DOE under grant DE-FG02-08ER54951 and by NNSA Coop. Agreements DE-FC52-06NA27588 and DE-FC52-06NA27586.

Penka Cox
UNR, Reno,NV

Date submitted: 25 Jan 2010 Electronic form version 1.4