Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Status of the Thomson Scattering System Developed for Diagnostic Testing on the Helicon Plasma Experiment (HPX)*[1] O. DUKE-TINSON, R. JAMES, S. NOLAN, E. PAGE, R. PAOLINO, B. ROMANO, J. ZUNIGA, C. SCHLANK, M. LOPEZ, J. KARAMA, J. SHERMAN, B. STUTZMAN, United States Coast Guard Academy Plasma Lab — HPX will utilize Electromagnetic Radiation Scattering to make internal plasma temperature and density point measurements. The United States Coast Guard Academy Plasma Laboratory's (CGAPL's) Thompson Scattering single spatial point system employs a 300 W CW YAG laser. We will use the internal temperature and density measurements in conjunction with the particle and spectral probes to track the plasmas transitions through the capacitive and inductive modes to ultimately reach the helicon mode. Once achieved, the system will be invaluable in making plasma quantitative temperature and density observations that will contribute to a comprehensive plasma profile. Most of the efforts thus far have been in the alignment and repair of the laser system. As this stage nears an end, efforts have begun to shift towards installing the aligned Thomson Scattering system (TS) into its permanent location, with mounted collection optics on HPX's top port. HPX will likely employ a polychrometer similar to the ones currently in use by HBTEP at Columbia University, for the spectral analysis of the scattered light. Data collected by the TS system will then be logged in real time by CGAPL's Data Acquisition (DAQ) system currently under construction. Further additions and progress of the TS alignment, installation, and calibration on HPX will be reported.

[1]Supported by U.S. DEPS Grant [HEL-JTO] PRWJFY12.

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Date submitted: 12 Jul 2013 Electronic form version 1.4