

Abstract Submitted  
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**Ion Doppler Spectroscopy Measurements on SSPX** J. KING, E.C. MORSE, UC Berkeley/LLNL, H.S. MCLEAN, R.D. WOOD, J.M. MOLLER, Lawrence Livermore National Laboratory, SSPX TEAM — The Sustained Spheromak Physics experiment (SSPX) at Lawrence Livermore National Laboratory is performing experiments pertaining to formation and sustainment of spheromak plasmas. An existing high resolution Ion Doppler Spectrometer (IDS) has been reactivated to measure impurity ion temperature and velocity. The IDS is composed of an Instruments S.A. HR 1000 Czerny-Turner monochromator with diffraction grating line density of 2400 lines/mm, which allows for first order spectra between 300 and 600nm. Combined with a 16 channel photomultiplier tube assembly in place of the output slit, a spectral width of 5 nm over 16 individual time-resolved spectra is achieved. By observing the Doppler broadening and shifting of OIII and OIV lines in the plasma, time resolved ion temperature and flow information can be investigated. As an added check, a separate Ocean Optics HR4000 spectrometer is used to obtain a time-integrated spectrum of each shot, in order to verify the presence of oxygen line radiation. Work performed under the auspices of the US DOE by University of California Lawrence Livermore National Laboratory under contract W-7405-ENG-48.

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