

Abstract Submitted
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Soft X-ray Measurements in SSPX¹ A.R. LUDINGTON, US Naval Academy, Annapolis, MD 21402, D.N. HILL, R.D. WOOD, H.S. MCLEAN, J.M. MOLLER, Lawrence Livermore National Laboratory, Livermore, CA 94551 — We seek to measure time-resolved electron temperatures in the SSPX plasma using soft X-rays. To increase sensitivity to changes in temperature over the range 100-300 eV, we use two photodiode detectors sensitive to different soft X-ray energies. The detectors, one with a Zr/C coating and the other with a Ti/Pd coating, view the plasma along a common line of sight tangential to the magnetic axis of the spheromak, where the electron temperature is a maximum. The comparison of the signals over a similar volume of plasma, should be a stronger function of temperature than a single detector in the range of T_e ; 300 eV. The success of using photodiodes to detect changing temperatures along a chord will make the case for designing an array of the detectors, which could provide a time changing temperature profile over a larger portion of the plasma. Photodiode characteristics, method of implementation and initial results will be presented.

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David Hill
LLNL

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