

Abstract Submitted
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Optical Spectroscopy Experiments on the 500 kA XP Pulsed Power Generator¹ KATE BLESENER, TANIA SHELKOVENKO, SERGEI PIKUZ, ISAAC BLESENER, DAVID CHALENSKI, CAD HOYT, PATRICK KNAPP, JOHN GREENLY, DAVID HAMMER, Laboratory of Plasma Studies, Cornell University, YITZHAK MARON, Weizmann Institute of Science — A new diagnostic technique using non-perturbing emission spectroscopy at visible wavelengths is being developed to determine the magnetic field in high energy density plasmas. This technique which makes use of the Zeeman Effect, has been demonstrated in experiments performed at the Weizmann Institute of Science in plasmas with lower energy densities [1]. Experiments on the 500 kA XP pulsed power generator at Cornell University are exploring the properties of optical spectra emitted by single exploding wires, wire-arrays, and X pinches. We are studying the time resolved visible spectra to identify appropriate spectral lines for measuring magnetic field strength. Preliminary results will be discussed.

[1] E. Stambulchik, K. Tsigutkin, and Y. Maron. Phys. Rev. Lett. 98, 225001 (2007).

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Kate Blesener
Laboratory of Plasma Studies, Cornell University

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