

Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Time Resolved Optical Spectroscopy Experiments on the 500 kA XP Pulsed-Power Generator K.S. BELL, S.A. PIKUZ, T.A. SHELKOVENKO, R.D. MCBRIDE, I.C. BLESENER, P.F. KNAPP, D.A. HAMMER, J.B. GREENLY, Laboratory of Plasma Studies, Cornell University, Y. MARON, Weizmann Institute of Science — Recent experiments on the 500 kA XP pulsed-power generator at Cornell University have explored the properties of optical spectra emitted by single exploding wires and wire-arrays carrying less than 13 kA and 50 kA per wire, respectively. We are studying the wire's time resolved visible spectra in order to identify the levels of current per wire that visible spectroscopy might provide a means to measure magnetic field strength[1]. We have also investigated the dependence of single wire visible spectra on the current, which was measured using a calibrated non-integrating Rogowski coil. PCDs and XRDs were employed to gather information about the temporal structure of the wire radiation. 1. E. Stambulchik, K. Tsigutkin, and Y. Maron. Phys. Rev. Lett. 98, 225001 (2007). This research was supported by DOE grant DE-FG03-98ER54496, Sandia National Laboratories contract AO258, and the NNSA Stockpile Stewardship Academic Alliances program under DOE Cooperative Agreement DE-FC03-02NA00057.

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Date submitted: 19 Jul 2008

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