

Abstract Submitted
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Plasma Parameters from Optical Emission Spectroscopy of Single Wire Aluminum Plasmas KATE BLESENER, SERGEI PIKUZ, TANIA SHELKOVENKO, ISAAC BLESENER, DAVID HAMMER, Cornell University, YITZHAK MARON, VLADIMIR BERNSHTAM, RAMY DORON, LEONID WEIGNARTEN, YURI ZARNITSKY, Weizmann Institute of Science — We are studying plasmas created by exploding aluminum wires on the 10 kA Low Current Pulser LCP3 at Cornell University, employing both high- and low-resolution time gated emission spectroscopy at visible wavelengths to determine the plasma parameters as a function of radial position and time. With high spectral resolution, we can determine the electron density profile, and we are studying the magnetic field in the plasma. To study the magnetic field we are using the new Zeeman Broadening technique developed at the Weizmann Institute of Science with lower energy densities [1]. We are using the low spectral resolution configuration to determine the ionization state, electron temperature, and electron density with greater time resolution. This research is supported by the DOE/NNSA joint program in HEDLP under contract DE-SC0002263 and by the NNSA SSAA program under DOE Cooperative Agreement DE-FC03-02NA00057.

[1] E. Stambulchik, *et al.* Phys. Rev. Lett. **98**, 225001 (2007).

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