

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

**Modeling of L-shell radiation from Ni and Invar wire array Z-pinch experiments on the 1MA COBRA generator** NICHOLAS OUART, ALLA SAFRONOVA, University of Nevada, Reno, TATIANA SHELKOVENKO, SERGEI PIKUZ, JONATHAN DOUGLASS, RYAN MCBRIDE, DAVID HAMMER, LPS, Cornell University — Wire array experiments using eight  $8\mu\text{m}$  pure Ni wires or eight  $10\mu\text{m}$  Invar (36% of Ni and 64% of Fe) wires were carried out at the 1MA COBRA facility at Cornell. The spatially resolved, time integrated L-shell X-ray line spectra have been recorded through a  $100\mu\text{m}$  slit using a flat spectrometer with a KAP crystal. A non-LTE collisional-radiative atomic kinetic model of Ni developed earlier [1] was applied to determine plasma parameters from the Ni-containing wire array experiments. The results of this modeling are presented and the interpretation of Ni radiation from Ni and Invar wire array experiments are compared and discussed. This research sponsored by the NNSA under DOE Cooperative Agreement DE-F03-02NA00057 and in part by fellowship support from the National Physical Science Consortium and Sandia National Laboratories, Albuquerque.  
[1] K. M. Chandler, A.S. Shlyaptseva, N.D. Ouart, S.B. Hansen, M.D. Mitchell, S. A. Pikuz, T. A. Shelkovenko, D.A. Hammer, V. Kantsyrev and D. Fedin, “Spectroscopic Analysis of X-ray Bursts from Nichrome and Conichrome X-Pinch Plasmas,” Rev. Sci. Instr. 75, 3702 (2004).

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Date submitted: 20 Jul 2005

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