

Abstract Submitted
for the FWS14 Meeting of
The American Physical Society

Spectroscopic Analysis of K- and L-Shell Radiation from Gas-Puff Jet Experiments on the UNR Leopard Laser¹ E.E. PETKOV, A.S. SAFRONOVA, V.L. KANTSYREV, J.J. MOSCHELLA, P. WIEWIOR, V.V. SHLYAPSTEVA, M.C. COOPER, M.E. WELLER, I.K. SHRESTHA, A. STAFFORD, K.A. SCHULTZ, Univ of Nevada - Reno — The study of cluster formation in gas-puff jet experiments and the x-ray emission from them under fs and ns laser impulses is of interest as there are many applications in physics (x-ray backlighting, lithography, high-harmonic generation, etc.) We present spectroscopic analysis of K- and L-shell radiation from Ar and Kr gas-puff jet experiments performed on the high-power Leopard Laser at UNR. To enhance our theoretical understanding of this radiation, and to help with identification of spectral lines, non-local thermodynamic equilibrium (non-LTE) kinetic models of Ar and Kr have been developed. Approximate temperature and density parameters have been identified in experiments with pure Kr, pure Ar, and Kr/Ar mixtures. Further work is discussed.

¹This work was supported by the Defense Threat Reduction Agency, Basic Research Award # HDTRA1-13-1-0033, to the University of Nevada, Reno, and in part by the DOE/NNSA Cooperative Agreements DE-NA0001984 and DE-NA0002075.

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Date submitted: 10 Oct 2014

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