

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

X-Ray Driven Planar Target¹ JACK DAVIS, TZVETELINA PETROVA, Plasma Physics Division, Naval Research Laboratory 4555 Overlook Ave. SW, Washington. DC 20375, USA, KENNETH WHITNEY, Berkeley Research Assoc. 6551 Mid Cities Ave., Beltsville, MD 20705, USA, GEORGE PETROV, Plasma Physics Division, Naval Research Laboratory 4555 Overlook Ave. SW, Washington. DC 20375, USA — Lasing at ~ 4.45 keV has been observed in a series of experiments² in which an intense ultrashort KrF laser pulse was incident on a collection of small Xe clusters. Extensive modeling and simulation corroborate these findings.³ In this talk we investigate the interaction of an intense 4.45 keV x-ray pulse with a gold target. A robust non-LTE model is assembled to investigate the ionization physics and population dynamics of the gold target. We will focus on the absorption physics of the incident coherent x-ray pulse interacting with the gold target in order to evaluate the ionization states and excited state populations reached during the interaction. Both the early time and the late time phenomenology will be studied to determine the radiation characteristics and behavior of the x-ray emission from the gold target.

¹Work supported by NRL.

²Borisov A. B. *et. al.*, J. Phys B, **41**, 105602, (2008).

³Petrova Tz., *et. al.*, J. Phys B, **43**, 025602, (2010); **44**, 125601 (2011).

Tzvetelina Petrova
Plasma Physics Division, Naval Research Laboratory
4555 Overlook Ave. SW, Washington. DC 20375, USA

Date submitted: 18 Jul 2011

Electronic form version 1.4