

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Study of the particles kinetic energy enhancement in explosions of atomic argon clusters driven by two-color three pulse intense laser H.J. QUEVEDO, M. AVILA, T. DITMIRE, TCHILS - The University of Texas at Austin — A pump-probe experiment was designed to study the particle kinetic energy enhancement in the explosion of large argon clusters driven by high intensity lasers. The nano-plasma model has been effective in explaining laser-cluster interactions and the efficient absorption of laser energy by the cluster through resonant collisional heating. This resonance occurs when the electron density is similar to three times the critical density, enhancing the laser energy absorption by electrons. Previous experiments have shown the existence of this resonance achieving enhancement of the ions kinetic energy for an optimum delay between two laser pulses. In our experiment we attempt to reach the resonant condition two times to achieve extra absorption using a timed sequence of two intense red femtosecond pulses and one frequency double blue.

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Date submitted: 15 Jan 2008

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