Abstract Submitted
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Electron Generation in Fast Ignition Targets[1] R.B. STEPHENS, K. AKLI, General Atomics, T.J. BARTAL, F.N. BEG, S. CHAWLA, D.P. HIGGINSON, S. CHEN, T. MA, B.J. WESTOVER, M. WEI, T. YABUUCHI, UCSD, C. CHEN, MIT, H. CHEN, D.S. HEY, M.H. KEY, S. LEPAPE, A.J. MACKINNON, A.G. MACPHEE, P.K. PATEL, LLNL, R.R. FREEMAN, OSU, V.M. OVCHINNIKOV, L. VAN WOERKOM, Ohio State U., C. STOECKL, W. THEOBALD, LLE, Y. TSUI, U. Alberta — Recent experiments on thin-wall cone/wire targets, have shown 15% conversion of laser energy to a 40 μm ϕ wire via fast electrons [1]. Electrostatic fields on the cone exterior restrict electron motion unlike in a real fast ignition target where such fields are suppressed by the surrounding blow-off plasma. To eliminate such constraints, we have emulated those conditions with thick-wall ($\sim$200 μm) aluminum cones in experiments with 150 J, 1 ps laser pulses at the Titan laser facility. The resulting electrons were imaged using K_α fluorescence from Cu layers buried in the Al in front of the cone tip and quantified with a single hit CCD camera to get directionality and coupling efficiency. Results will be discussed at the meeting.

[1] J.A. King, et al., submitted to Phys. Rev. Lett. (2007).

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