Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Characterization of MeV Electron Generation using 527 nm Laser Pulses for Fast Ignition ROBERT FEDOSEJEVS, U of Alberta, D.P. HIGGINSON, UCSD, H. FRIESEN, U of Alberta, A. SOROKOVIKOVA, C.C. JARROTT, UCSD, A. LINK, G.E. KEMP, Ohio State U, D. HEY, Y. PING, LLNL, I. BUSH, U of York, H.F. TIEDJE, M.Z. MO, Y.Y. TSUI, U of Alberta, B. WESTOVER, F.N. BEG, UCSD, K.U. AKLI, R.R. FREEMAN, L.D. VAN WOERKOM, D. SCHUMACHER, Ohio State U, C. CHEN, H.S. MCLEAN, P. PATEL, T. DOEPPNER, LLNL, R.B. STEPHENS, General Atomics, J. PASLEY, U of York — J WESTWOOD, J TAIT, A BEAUDRY, S SINGH, U of Alberta, and MH Key, LLNL.
We investigate electron generation at intensities of relevance to Fast Ignition using second harmonic laser pulses, motivated by the need to understand the wavelength scaling of the processes and also the ability to obtain clean, prepulse free, target interaction conditions. 700fs duration pulses with peak intensities up to 5 x 10^{19} W cm^{-2} were employed at the TITAN laser facility at LLNL. Both planar and cone target geometries were studied using copper k-alpha imaging of tracer layers, Bremsstrahlung x-ray emission measurements of conversion efficiency and beam divergence and magnetic spectrometer measurements of escaping electrons to characterize the electron generation and propagation. Results of electron temperature and angular divergence will be presented.

Robert Fedosejevs
U of Alberta

Date submitted: 22 Jul 2011 Electronic form version 1.4