Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Resistive Stopping of Fast Electrons in Fast Ignition D.P. HIGGINSON, B. WESTOVER, T. BARTAL, S. CHAWLA, T. MA, M.S. WEI, UCSD, C.D. CHEN, D.S. HEY, P.K. PATEL, H. CHEN, M.H. KEY, A.J. MACKINNON, A.G. MACPHEE, H. MCLEAN, S. LE PAPE, LLNL, K.U. AKLI, R.B. STEPHENS, GA, R.R. FREEMAN, L.D. VAN WOERKOM, The Ohio State Univ., F.N. BEG, UCSD — The mechanisms of fast electron generation and transport are of critical important to the fast ignition approach to inertial confinement fusion. Fast electrons in multi-layered Al/Cu/Al/Ag/Al targets were created on the Titan Laser (150 J, 0.7 ps, $4x10^{19}$ W/cm^2). The relative importance of resistive and collisional stopping effects was studied by varying the Ag layer depth. K shell fluorescence from Cu and Ag were measured with a highly oriented pyrolytic graphite spectrometer, which was cross-calibrated with a single photon counting charged coupled device. Analysis is performed with the collisional Monte Carlo code ITS 3.0 by injecting hot electrons into a cold target using the absolutely calibrated K shell yeilds as constraints. A comparison is made with the hybrid/PIC code LSP to demonstrate resistive effects [1]. This work was supported by the US DOE under contracts DE-FC02-04ER54789 (Fusion Science Center) and DE-FG-02-05ER54834 (ACE).

[1] M.S.Wei et al., this conference.

Drew Higginson
University of California San Diego

Date submitted: 18 Jul 2009 Electronic form version 1.4