Abstract Submitted
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Study of dependence of fast electron transport on target material using the 10ps, 1.5kJ Omega EP laser[1] A. SOROKOVIKOVA, U California San Diego, M.S. WEI, R.B. STEPHENS, J. JACQUEZ, General Atomics, R. MISHRA, H. SAWADA, U California San Diego, W. THEOBALD, LLE, P. PATEL, H. MCLEAN, LLNL, Y. SENTOKU, U Nevada Reno, F.N. BEG, U California San Diego — Igniting a Fast Ignition (FI) target requires generation of hot electrons inside a cone tip that travel to the compressed fuel through the tip. Its material must withstand the shell implosion. The effect of different materials on electron transport was previously studied at the Titan laser (150J 0.7ps); emission from a buried fluor characterized the laser-generated electrons transmission through Al, Mo, or Au [1]. Recent experiments using the OMEGA EP (300J, 1ps) showed similar effects on transport—going from Al to Au halved the detected electrons and decreased their divergence. We have extended these experiments to 10ps, 1.5kJ pulses to study pulse length effects. Experiments are modeled using both collisional and hybrid PIC codes. Detailed results will be presented.

[1] S. Chawla et al., "Z-effects on Fast Electron Transport in Fast Ignition ICF," this conference.

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