Abstract Submitted
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Dependence of Laser Energy Coupling and Fast Electron Source Characteristics on the Buried Cone Material[1] R.B. STEPHENS, M.S. WEI, J. JAQUEZ, GA, A. SOROKOVIKOVA, S. CHAWLA, R. MISHRA, L.C. JARROTT, J. KIM, A. MORACE, H. SAWADA, Y. YABUUCHI, F.N. BEG, UCSD, K. AKLI, E. KEMP, A. LINK, R.R. FREEMAN, OSU, W. THEOBALD, LLE, P. PATEL, C.D. CHEN, H. CHEN, H. MCLEAN, LLNL, D. BATANI, U Bordeaux, R. FEDOSEJEVS, M.Z. MO, U Alberta, Y. SENTOKU, U Nevada Reno — Igniting a Fast Ignition (FI) target requires generation of hot electrons at a cone tip that travel to the DT fuel through the tip. Previous studies have used flat interfaces. We report extension of this work to FI-type cone interfaces in campaigns at Titan (150J, 0.7 ps) and OMEGA EP (300J, 1 ps, and 1.5 kJ, 10 ps). The Titan campaign showed 2X higher coupling with the cone target compared to the flat, but with a larger angular spread of electrons when the surface is Au rather than Al. Further study using the Omega EP examined dependence on the pulse length and laser energy. The experiments are modeled using both collisional and hybrid PIC codes. Detailed results will be presented. Understanding these dependences is important for FI target optimization.

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