Abstract Submitted
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Study of Fast Electron Energy Deposition into Imploded High Density Plasma Using Cu-Doped CD Shell Targets[1] LEONARD JARROTT, UCSD, M.S. WEI, GA, H. SAWADA, UCSD, W. THEOBALD, A.A. SOLODOV, LLE, C. MCGUFFEY, UCSD, R.B. STEPHENS, GA, C. STOECKL, C. MILEHAM, F. MARSHALL, J. DELETTREZ, R. BETTI, LLE, P.K. PATEL, H. MCLEAN, C. CHEN, M.H. KEY, T. DOEPPNER, LLNL, T. YABUUCHI, T. IWAWAKI, H. HABARA, Osaka U, A. GREENWOOD, N. ALFONSO, D. HOOVER, E. GIRALDEZ, GA, F.N. BEG, UCSD — Fast electron spatial energy deposition into the imploded high density plasma has been characterized for the first time in an integrated cone-guided Fast Ignition experiment. This work uses the OMEGA beams (18kJ) for fuel assembly, and the high intensity EP beam (10ps, 0.5-1.5kJ, $I_{peak} > 10^{19}$ W/cm^2), focused onto the inner cone tip, to produce fast electrons. Energy deposition is diagnosed via Cu K-shell radiation from the Cu-doped CD shell. Results indicate Ka yield scaling with EP energy. Cu Ka distribution agrees with DRACO modeling. Ka images also suggest electrons being produced roughly 100_{μ}m away from the cone tip, consistent with pre-plasma filling the cone. Comparison of experimental data with modeling will be presented.

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