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Electron Generation and Transport as a Function of Preplasma in Cone-Attached Targets[1] T. MA, M.H. KEY, D. HEY, S. LEPAPE, A.J. MACKINNON, A.G. MACPHEE, P.K. PATEL, LLNL, K. AKLI, R.B. STEPHENS, GA, T. BARTAL, S. CHAWLA, D. HIGGINSON, J.A. KING, M.S. WEI, B. WESTOVER, T. YABUUCHI, F.N. BEG, UCSD, C.D. CHEN, MIT, R.R. FREEMAN, E. KEMP, V. OVCHINNIKOV, L. VAN WOERKOM, OSU, C. STOECKL, W. THEOBALD, U of Rochester, Y.Y. TSUI, U of Alberta — The underlying physics of laser energy deposition and transport in cone-guided fast ignition is very complex. It has been shown recently that preplasma can significantly affect the generation and transport of electrons in cone targets.[2,3] In integrated FI, prepulse energies of the order of 1 J are expected. Experiments have been performed at the Titan laser (10^{20} W/cm^2) at LLNL in which prepulse levels were artificially induced at levels of up to 1 J using the long pulse beam into cone-wire targets. By simultaneously using Cu Kα imaging, single photon counting cameras, and HOPG crystal spectroscopy, absolute information of spatially resolved Kα radiation could give yields of hot electrons and their transport scalelengths as a function of preplasma.

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[2]S. D. Baton, et al., Phys. Plasmas **15**, 042706 (2008).
[3]L. Van Woerkom, et al., Phys. Plasmas **15**, 056304 (2008).

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