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Transport of Energy by Laser-Generated Fast Electrons within Cone-wire Targets[1] J. KING, T. MA, F. BEG, U.C. San Diego, Mechanical and Aerospace Engineering, La Jolla CA, M. KEY, J. KOCH, A. MACKINNON, A. MACPHEE, P. PATEL, Lawrence Livermore National Lab, Livermore CA, R. STEPHENS, General Atomics, San Diego CA, K. AKLI, R. FREEMAN, L. VAN WOERKOM, Ohio State University, Columbus OH, R. HEATHCOTE, K. LANCASTER, P. NORREYS, Rutherford Appleton Lab, Chilton, Oxon, OX11OQX, UK, R. MASON, Research Applications Corp., Los Alamos NM, W. THEOBALD, Laboratory for Laser Energetics, University of Rochester, Rochester NY — Coupling of energy via laser accelerated electrons to 10 to 40μm diameter Cu wires attached to Al cones irradiated by a 500J, 1ps, f/3 focused laser is studied as a surrogate for fast ignition. Cu Ka images were recorded using a Bragg crystal imager. Ka yield was obtained with a single hit CCD and relative intensities in Cu K-shell spectra were recorded with a HOPG crystal spectrometer. Fitting 1D numerical modeling to axial profiles of Ka emission estimates the coupling efficiency and the average temperature of the electrons in the 1D Ohmically inhibited energy transport.

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