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Energetic Electron Spectra with High Ultraintense Radiation on Thick Targets[1] A. LINK, R.R. FREEMAN, D.W. SCHUMACHER, L.D. VAN WOERKOM, OSU, Columbus, OH, H. CHEN, D.S. HEY, M.H. KEY, S. LE PAPE, A.J. MACKINNON, A.G. MACPHEE, P.K. PATEL, Y. PING, LLNL, Livermore, CA, T. BARTAL, T. MA, M.S. WEI, F.N. BEG, UCSD, San Diego, CA, C.D. CHEN, MIT, Cambridge, MA, Y.Y. TSUI, UA, Edmonton, Alberta, K.U. AKLI, R.B. STEPHENS, General Atomics — Ultraintense laser interactions with solid density plasma involve significant transfer of energy to electrons at the critical density. The energy and angular distribution of the electrons play an important role in heating the target and are critical to the Fast Ignitor approach to Inertial Fusion Energy. The interaction is complicated by a nonuniform laser intensity, and the measured escaping electron spectrum is modified by surface fields. Experiments were conducted on the Titan Laser at 10^{20} W/cm^2 to determine the character of the electron distribution and the effect of target charging on the escaping electrons. Results will be presented for escaping electron distributions from .8 to 120 MeV for 1mm thick metal foils.

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