Abstract Submitted for the DPP05 Meeting of The American Physical Society

Monte Carlo Simulations for Studying Hot-Electron Transport in Non-Degenerate Plasmas of Arbitrary Z C.D. CHEN, C.K. LI, J.A. FRENJE, F.H. SEGUIN, R.D. PETRASSO, MIT, J. MYATT, J.A. DELETTREZ, LLE — A Monte Carlo code is used to model the scattering and energy loss of fast electrons off ions and electrons in a cold non-degenerate plasma of arbitrary Z. For Z = 1solids and plasmas, the effects of e-e scattering are expected to be as important as e-i scattering. These calculations will be compared to the results of analytic calculations studying the penetration, energy deposition, straggling and blooming of fast electrons. These calculations will be used to establish requirements for fast ignition and tolerable levels of electron preheat for direct and indirect ignition targets. This work was supported in part by LLE, LLNL, the U.S. DoE, the Univ. of Rochester, and the N.Y. State Energy Research and Development Authority.

> Fredrick Seguin MIT

Date submitted: 25 Aug 2005

Electronic form version 1.4