

Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Correlated Electron Stopping in Fast Ignition Plasmas¹ IAN ELLIS, UCLA and LLNL, FRANK GRAZIANI, DAVID STROZZI, MICHAEL SURH, LLNL, PAUL GRABOWSKI, LANL, VIKTOR DECYK, FRANK TSUNG, WARREN MORI, UCLA — The effect of correlated electron stopping on Fast Ignition is an open question. In this process, the wake produced by an electron modifies the dynamics and stopping power of the electrons that travel behind it. Others have studied this process in detail in the context of non-relativistic ion beam stopping. Aside from theoretical studies, the process has been largely ignored for relativistic electron stopping. By comparing non-relativistic stopping results with the scalable molecular dynamics code ddcMD, we demonstrate that Particle-in-Cell (PIC) codes are useful tools for studying the process. We present some correlated electron stopping results from the UCLA PIC code QuickPIC.

¹Prepared by LLNL under Contract DE-AC52-07NA27344 and by UCLA under Grant DE- FG52-09NA29552

Ian Ellis
UCLA and LLNL

Date submitted: 12 Jul 2013

Electronic form version 1.4