

Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Toward improved characterization of laser plasma coupling in NIF-scale plasmas¹ WILLIAM KRUER, LLNL Consultant, PIERRE MICHEL, JOHN MOODY, LAURENT DIVOL, Lawrence Livermore National Laboratory — To date laser plasma coupling has been “good enough” (i.e., gives sufficient drive as well as sufficiently controllable symmetry) to enable numerous well-diagnosed NIF implosion experiments. On a longer time scale, an improved characterization of laser plasma coupling in NIF-scale plasmas is desirable both for ignition and other high energy density physics experiments. Important issues include the time-dependence of the cross beam energy transfer, the role of stimulated sideward scattering of laser light in the hohlraum, overlapping beam effects on stimulated scattering, the efficiency with which quarter-critical density instabilities generate superhot electrons, and the evolving plasma conditions within the hohlraum. Simple experiments to address some of these issues are discussed.

¹This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344

William Krueer
LLNL Consultant

Date submitted: 23 Jul 2012

Electronic form version 1.4