*

Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

Structure and dynamics of plasma interfaces in laser-driven hohlraums[1] C. K. LI, H. SIO, J. A. FRENJE, F. H. SÉGUIN, A. BIRKEL, R. D. PETRASSO, MIT, S. C. WILKS, P. A. AMENDT, B. A. REMINGTON, LLNL, P.-E. MASSON-LABORDE, S. LAFFITE, V. TASSIN, CEA, R. BETTI, T. C. SANSTER, LLE, P. FITZSIMMONS, M. FARRELL, GA — Understanding the structure and dynamics of plasma interfaces in laser-driven hohlraums is important because of their potential effects on capsule implosion dynamics. To that end, a series of experiments was performed to explore critical aspects of the hohlraum environment, with particular emphasis on the role of self-generated spontaneous electric and magnetic fields at plasma interfaces, including the interface between fill-gas and Au-blowoff. The charged fusion products (3-MeV DD protons and 14.7-MeV D^3He protons generated in shock-driven, D^3He filled backlighter capsule) pass through the subject hohlraum and form images on CR-39 nuclear track detectors, providing critical information. Important physics topics, including ion diffusive mix and Rayleigh-Taylor instabilities, will be studied to illuminate ion kinetic dynamics and hydrodynamic instability at plasma interfaces in laser-driven hohlraums.

[1]*This work was supported in part by LLE, the U.S. DoE (NNSA, NLUF) and LLNL.

F. H. Séguin
Massachusetts Institute of Technology

Date submitted: 21 Sep 2016 Electronic form version 1.4