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Laser Propagation Effects and Symmetry at Hohlräum Temperatures of Order 100eV¹ S.R. GOLDMAN, N.M. HOFFMAN, G.A. KYRALA, E.S. DODD, H.A. ROSE, LANL — Radiation emission experiments from capsules in NIF-0.7 scale vacuum hohlraums at the Omega laser frequently indicate shapes that are more oblate (with respect to the hohlraum symmetry axis) than simulations.² This has been attributed to the modeling of laser beams which make relatively small (21 °) angles with that axis. Shape agreement is significantly improved by assuming that the laser beams are statistically scattered through a parametrically controlled algorithm. We have examined the simulations with the LIP post-processor³ to see whether laser plasma instabilities could account for the scattering. Due to the low laser intensities, instabilities are relatively weak and appear to be confined to regions close the initial capsule and hohlraum wall boundaries; nevertheless the pF3D code⁴ should be useful in evaluating their role in laser propagation modification. In addition, we have estimated the effect of the experimental phase plate speckle patterns on stable beam scattering.

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²G. Kyrála et al., BAPS **52** (16), p. 318 (2007)

³ICF Annual Report, LLNL, UCRL-LR-105820-98, p. 13 (1998)

⁴S.H. Glenzer et al., Nature Physics **3**, 716 (2007)

Prefer Oral Session
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S. Robert Goldman
srg@lanl.gov
Los Alamos National Laboratory

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