

Abstract Submitted
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Reduction of Effects of Nonuniform Laser Irradiation in Polar-Direct-Drive Implosions on the NIF I.V. IGUMENSHCHEV, R.S. CRAXTON, P.W. MCKENTY, J.A. MAROZAS, S. SKUPSKY, Laboratory for Laser Energetics, U. of Rochester — Polar direct drive (PDD) was proposed to perform direct-drive implosion experiments on the National Ignition Facility in its indirect-drive configuration. This requires repointing some of the laser beams toward the equator to reduce irradiation nonuniformities on a target. We present results of a numerical study of optimization techniques that minimize the effects of the irradiation nonuniformities on the cryogenic PDD target performance. These techniques include variation of the beam pointing, individual pulse shapes, spot shapes for each beam, and alternative target geometry.¹ Numerical simulations utilize the 2-D hydrodynamic code *DRACO* with the full 3-D laser ray trace. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-92SF19460.

¹R. S. Craxton and D. W. Jacobs-Perkins, Phys. Rev. Lett. **94**, 095002 (2005).

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