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Optimization of Drive Uniformity in NIF Polar-Drive Implosions Using Gated X-Ray Self-Emission Images R.S. CRAXTON, P.W. MCKENTY, P.A. OLSON, D.H. FROULA, D.T. MICHEL, Laboratory for Laser Energetics, U. of Rochester, S. LEPAPE, A.J. MACKINNON, LLNL — Gated x-ray self-emission images have been obtained in "exploding-pusher," polar-drive, diagnostics commissioning experiments[1] on the NIF. They show a difference in drive between the pole and equator that serves as a diagnostic of drive uniformity. Modeling of the shell trajectories using the 2-D hydrodynamics code *SAGE*[2] indicates that the difference between the pole and equator may result from deviations between the modeled and actual on-target phase-plate profiles. The sensitivity of the implosion uniformity to these profiles and to other parameters such as defocus and repointing has been explored with the goal of finding improved polar-drive–irradiation designs. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

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