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Initial Polar-Drive Implosions on the NIF D.D. MEYERHOFER, R.S. CRAXTON, D.H. FROULA, M. HOHENBERGER, P.W. MCKENTY, D.T. MICHEL, F.J. MARSHALL, P.B. RADHA, T.C. SANGSTER, Laboratory for Laser Energetics, U. of Rochester, S. LE PAPE, K.N. LAFORTUNE, B.J. MACGOWAN, A.J. MACKINNON, J.D. MOODY, C. WIDMAYER, LLNL — The polar drive (PD) concept[1] for inertial confinement fusion is the only near-term alternative to indirect-drive ignition on the National Ignition Facility (NIF).[2] It requires that the NIF beams be pointed toward the equator of a direct-drive capsule and that direct-drive–specific beam smoothing be installed. The first ignition-relevant PD implosions have been performed on the NIF. While the direct-drive specific beam smoothing is not yet available, these experiments test many aspects of implosion physics at ignition-relevant energies and scale lengths. This talk reports on results from these initial experiments including initial estimates of the effects of laser–plasma instabilities and the levels of hot-electron generation caused by the two-plasmon−decay instability. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

[1]S. Skupsky *et al.*, Phys. Plasmas **11**, 2763 (2004).
[2]S. W. Haan *et al.*, Phys. Plasmas **18**, 051001 (2011).

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