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Polar-Direct-Drive Shock-Timing Measurements at the National Ignition Facility T.R. BOEHLY, M.J. ROSENBERG, M. HOHENBERGER, D.N. POLSIN, P.B. RADHA, A. SHVYDKY, V.N. GONCHAROV, D.R. HARDING, S.P. REGAN, T.C. SANGSTER, Laboratory for Laser Energetics, U. of Rochester, D.P.M. CELLIERS, D.E. FRATANDUONO, S.N. DIXIT, LLNL — The adiabat of an inertial confinement fusion implosion affects both the compressibility and stability of the target being imploded and is determined by a series of shock waves that precede the implosion. We report on experiments at the National Ignition Facility that measure the strength and timing of shocks in surrogate CH targets driven by two $\sim$ 400-ps pulses in the polar-direct-drive (PDD) configuration. The results facilitate optimizing the drive pulses to produce the requisite implosion adiabat on future cryogenic implosions, but more importantly will assess the efficacy of the PDD technique. Since we measure shock velocities simultaneously at the pole and equator, these velocities provide a measure of the drive uniformity created by the PDD configuration. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

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