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Results from Recent NIF Shock Timing Experiments¹ H.F. ROBEY, P.M. CELLIERS, LLNL, T.R. BOEHLI, LLE, J.L. KLINE, LANL, M.W. BOWERS, S. LE PAPE, D.R. FARLEY, A.J. MACKINNON, J.D. MOODY, J.H. EGGERT, D.H. MUNRO, O.S. JONES, J.L. MILOVICH, D. CLARK, LLNL, A. NIKROO, K.A. MORENO, GA, J.J. KROLL, A.V. HAMZA, D.A. BARKER, O.L. LANDEN, M.J. EDWARDS, LLNL, D.D. MEYERHOFER, LLE — Experiments are underway to tune the shock timing of capsule implosions on the National Ignition Facility (NIF). These experiments use a modified cryogenic hohlraum geometry designed to precisely match the performance of ignition hohlraums. The targets employ a re-entrant Au cone to provide optical access to multiple shocks as they propagate in the liquid deuterium-filled capsule interior. The strength and timing of all four shocks is diagnosed with VISAR (Velocity Interferometer System for Any Reflector). The tuned pulse shape resulting from these experiments has been tested in ignition capsule implosions and demonstrates a considerable improvement in fuel adiabat. Experimental results and comparisons with numerical simulation are presented.

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