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Development of a Two-shock, Vacuum Hohlraum, Plastic Capsule Implosion Experimental Platform on NIF[1] JAY SALMONSON, STEPHEN MACLAREN, THOMAS DITTRICH, TAMMY MA, JESSE PINO, ROBERT TIPTON, Lawrence Livermore Nat'l Lab, RICHARD OLSON, Los Alamos Nat'l Lab
— A new experimental platform has been developed to study a variety of indirect drive capsule implosion characteristics. A relatively small, $\sim$ 1700 micron outer diameter, and thick, $\sim$ 200 microns, uniformly Silicon doped, gas-filled plastic capsule is driven inside a standard size 5750 micron diameter ignition hohlraum. The hohlraum fill is near vacuum to reduce back-scatter and improve laser/drive coupling. A two-shock pulse of about $\sim$ 1 MJ of laser energy drives the capsule. The thick capsule prevents ablation front feed-through to the imploded core. Compared to an NIF ignition experiment, this relatively simple, low laser energy platform will allow detailed studies, via sequences of shots, scanning implosion symmetry, capsule gas-fill and convergence, roughness and mix, as well as optimizing stagnation pressure. Recent experimental results toward commissioning this platform will be discussed.

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