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Experimental assessment of double shell shape control and predictability at high drive energy[1] PAUL KEITER, RYAN SACKS, ERIC LOOMIS, ELIZABETH MERRITT, JOSHUA SAUPPE, DAVID MONTGOMERY, DOUG WILSON, TANA CARDENAS, SEAN FINNEGAN, STEVE BATHA, JOHN KLINE, Los Alamos National Laboratory — Double shell targets provide an alternative and complimentary path to single shell targets in inertial confinement fusion (ICF). The LANL double shell platform utilizes a 5.75 mm diameter, 10.13 mm long cylindrical hohlraum as the driver for the implosion. The LANL campaign started with experiments at lower laser energy to demonstrate predictive shape control and gradually increased the laser energy to our design goal of 1.5 MJ. We compare the experimentally measured shape and velocity to the preshot predictions to evaluate our ability to model the implosion shape at a laser energy of 1.5 MJ. These particular experiments were designed to be slightly oblate, which is observed in the magnitude of the measured P2/P0 and P4/P0, which range from 2-10% over the time of the measurements. We will also discuss the dominant sources of shape asymmetry.

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