Abstract Submitted
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Experimental measurement of interface trajectories in an indirectly-driven planar double-shell geometry[1] H.F. ROBEY, J.F. HANSEN, J.M. MILOVICH, P. AMENDT, H.-S. PARK, M. BONO, LLNL — Indirectly-driven double-shell implosions are being investigated as a possible non-cryogenic path to ignition on the NIF. Recent simulations [1], however, have shown that the Au inner shell is highly unstable to high mode number (>200) perturbations, possibly leading to breakup of the inner shell. These studies also suggest that this instability can be greatly reduced by tamping the outer surface of the inner shell with a material of intermediate density between that of the high-Z inner shell and the surrounding low-density foam. In order to test the validity of these simulations, a planar double-shell experimental testbed is being developed. Initial halfraum-driven experiments conducted on the Omega laser have investigated the preheat expansion and subsequent shock-driven recompression of two planar double-shell configurations, one with and one without a CH tamper layer between the Au "inner shell" and a 50 mg/cc carbon foam. The results of these experiments and comparison with simulations will be presented. [1] J.L. Milovich *et al.*, *Phys. Plasmas* **11**, 1552 (2004).

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