D. S. Montgomery, LANL
E. N. Loomis, LANL
E. C. Merritt, LANL
E. S. Dodd, LANL

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Double shell planar experiments on OMEGA[1] E. S. DODD, E. C. MERRITT, S. PALANIYAPPAN, D. S. MONTGOMERY, W. S. DAUGHTON, D. W. SCHMIDT, T. CARDENAS, D. C. WILSON, E. N. LOOMIS, S. H. BATHA, LANL, Y. PING, V. A. SMALYUK, P. A. AMENDT, LLNL — The double shell project is aimed at fielding neutron-producing capsules at the National Ignition Facility (NIF), in which an outer low-Z ablator collides with an inner high-Z shell to compress the fuel. However, understanding these targets experimentally can be challenging when compared with conventional single shell targets. Halfraum-driven planar targets at OMEGA are being used to study physics issues important to double shell implosions outside of a convergent geometry. Both VISAR and radiography through a tube have advantages over imaging through the hohlraum and double-shell capsule at NIF. A number physics issues are being studied with this platform that include 1-d and higher dimensional effects such as defect-driven hydrodynamic instabilities from engineering features. Additionally, the use of novel materials with controlled density gradients require study in easily diagnosed 1-d systems. This work ultimately feeds back into the NIF capsule platform through manufacturing tolerances set using data from OMEGA.

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Evan Dodd
Los Alamos National Laboratory

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