Abstract Submitted
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Progress in advancing the Revolver triple-shell direct-drive ignition concept[1] M.J. SCHMITT, KIM MOLVIG, B.S. SCHEINER, C.A. WILDE, N.S. KRASHENINNIKOVA, D.W. SCHMIDT, S.C. HSU, T.A. GIANAKON, Los Alamos National Laboratory, M.J. ROSENBERG, F.J. MARSHALL, P.W. MCKENTY, D.N. POLSIN, R.S. CRAXTON, U. of Rochester's Laboratory for Laser Energetics, H. HUANG, General Atomics, J.G. MANCE, MSTS — Recent progress in validating the concept of multi-shell direct-drive ignition has been made. Results of experiments on Omega are consistent with the Revolver ignition requirements of high (>90%) coupling of direct-drive laser energy to large Be capsules, the high hydro-efficiency (˜10%) of direct-drive laser energy to payload kinetic energy for small laser beam to capsule ratios (˜1/3), and as-predicted implosion kinetic energy transfer efficiency between concentric colliding shells. The results of recent Omega and NIF experiments will be discussed in relation to the current Revolver triple shell ignition design. Ignition design features including split-quad laser pointing, inner capsule cushion layers to smooth high-mode perturbations and novel fabrication concepts. The goals of current LANL/LLE collaborative experimental efforts include the demonstration of smoothing techniques for both target and laser drive imperfections.

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Mark Schmitt
Los Alamos National Laboratory

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