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Simulation of Asymmetrically Driven Hohlraum Experiments on OMEGA STUART MCALPIN, RICHARD STEVENSON, KELLY VAUGHAN, JOHN FOSTER, AWE — A campaign of experiments is being undertaken on the OMEGA laser to asymmetrically drive an imploding capsule within a hohlraum. This acts as a stringent test of the modeling of both the conditions inside the hohlraum and the evolution of complex hydrodynamic systems. These experiments are being modeled using two methodologies. Simulating the laser deposition and early- time evolution in a Lagrangian code, before linking to an Eulerian code for the late-time evolution, is a well established route. Simulation of the entire evolution using an ALE (Arbitrary Lagrangian Eulerian) code is also being attempted. A number of techniques have been identified which potentially offer significant control of both the spatial and temporal asymmetry of the drive on the capsule. These are being tested systematically in two ways. Uniform density aerogel spheres are used to resolve the temporal variation in drive and thin glass shells with a GDP ablator are used to resolve the spatial variation in drive. In both cases the evolution of the configuration is being determined using titanium area backlighting at 4.7 keV combined with a gated x-ray imaging system.

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