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Simulation of Thin-Shell Capsule Compression in a Hohlraum with Diagnostic Ports[1] MARK SCHMITT, ROBERT GOLDMAN, Los Alamos National Laboratory, ROBERT KIRKWOOD, Lawrence Livermore National Lab — Observation of the compression of thin spherical shells ("thin-shells") is currently being pursued as a method to determine the early-time radiation drive symmetry inside laser-driven hohlraums for the National Ignition Campaign. Observation of thin shell symmetry during implosion requires x-ray backlighting of the capsule, typical performed through diagnostic holes placed near the waist of the high-atomic-number (e.g. gold) hohlraum. Radiation losses through these holes reduce the temperature inside the hohlraum and introduce additional asymmetry (beyond that from the laser drive) in the radiation environment. Simulations to assess the effects of laser drive and diagnostic holes on capsule implosion symmetry have been performed. We compare the results of these simulations to experiments performed on the Omega laser.

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