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Modeling of laser-driven hydrodynamics experiments CARLOS DI STEFANO, FORREST DOSS, ALEX RASMUS[1], KIRK FLIPPO, TIFFANY DESJARDINS, ELIZABETH MERRITT, JOHN KLINE, Los Alamos National Laboratory, JON HAGER, Lockheed-Martin, PAUL BRADLEY, Los Alamos National Laboratory — Correct interpretation of hydrodynamics experiments driven by a laser-produced shock depends strongly on an understanding of the time-dependent effect of the irradiation conditions on the flow. In this talk, we discuss the modeling of such experiments using the RAGE radiation-hydrodynamics code. The focus is an instability experiment consisting of a period of relatively-steady shock conditions in which the Richtmyer-Meshkov process dominates, followed by a period of decaying flow conditions, in which the dominant growth process changes to Rayleigh-Taylor instability. The use of a laser model is essential for capturing the transition.

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