

Abstract Submitted
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Quantifying Uncertainties in Modeling of Radiative Shocks Using Coupling of HYADES and CRASH¹ M.J. GROSSKOPF, R.P. DRAKE, J.P. HOLLOWAY, B. FRYXELL, C.C. KURANZ, C.C. CHOU, University of Michigan, M. ADAMS, B. MALLICK, Texas A&M University, D. BINGHAM, Simon Fraser University — The Center for Radiative Shock Hydrodynamics (CRASH) is a computational center at the University of Michigan focused on modeling radiation-hydrodynamics and developing a quantified assessment of predictive capability of the CRASH code. Critical to the later goal is the utilization of statistical tools for uncertainty quantification (UQ) of both the models and the experiment. In order to model laser experiments, the CRASH code must be coupled with HYADES, a 1D and 2D Lagrangian radiation-hydrodynamics code with a laser energy deposition model. Results from a batch of 1D simulations, initialized in CRASH using output from HYADES, to model a radiative shock experiment carried out on the Omega laser facility in October 2008, will be presented. The batch is designed to investigate experimental and modeling uncertainties and do a sensitivity analysis of diagnosable features to the system parameters. 2D simulations of radiative shock experiments utilizing 2D HYADES (h2d) to initialize CRASH will also be reported.

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