

Abstract Submitted
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Collaborative Comparison of High-Energy-Density Physics Codes¹ M. FATENEJAD, U. Chicago, C. FRYER, LANL, B. FRYXELL, U. Michigan, D. LAMB, U. Chicago, E. MYRA, U. Michigan, J. WOHLBIER, LANL — We will describe a collaborative effort involving the Flash Center for Computational Science, The Center for Radiative Shock Hydrodynamics (CRASH), LANL, and LLNL to compare several sophisticated radiation-hydrodynamics codes on a variety of HEDP test problems and experiments. Currently we are comparing efforts to simulate ongoing radiative shock experiments being conducted by CRASH at the OMEGA laser facility that are relevant to a wide range of astrophysical problems. The experiments drive a collapsed planar radiative shock through a Xenon-filled shock tube. Attempts to simulate these experiments have uncovered various challenges to obtaining agreement with experimental results. We will present the results of code-to-code comparisons that have enabled us to understand the impact of differences in numerical methods, physical approximations, microphysical parameters, etc.

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