Simulations of Laboratory Astrophysics Experiments using the CRASH code MATTHEW TRANTHAM, CAROLYN KURANZ, MARIO MANUEL, PAUL KEITER, R.P. DRAKE, University of Michigan — Computer simulations can assist in the design and analysis of laboratory astrophysics experiments. The Center for Radiative Shock Hydrodynamics (CRASH) at the University of Michigan developed a code that has been used to design and analyze high-energy-density experiments on OMEGA, NIF, and other large laser facilities. This Eulerian code uses block-adaptive mesh refinement (AMR) with implicit multigroup radiation transport, electron heat conduction and laser ray tracing. This poster/talk will demonstrate some of the experiments the CRASH code has helped design or analyze including: Kelvin-Helmholtz, Rayleigh-Taylor, imploding bubbles, and interacting jet experiments. This work is funded by the Predictive Sciences Academic Alliances Program in NNSA-ASC via grant DEFC52- 08NA28616, by the NNSA-DS and SC-OFES Joint Program in High-Energy-Density Laboratory Plasmas, grant number DE-NA0001840, and by the National Laser User Facility Program, grant number DE-NA0000850.

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