1032-68-109 **Barbara G. DeVolder*** (bgd@lanl.gov), Los Alamos National Laboratory, Group X-1-HEDPL, MS F699, Los Alamos, NM 87545, and **James A. Cobble**, **Thomas E. Tierney** and **Nelson M. Hoffman**. *How to Validate Radiation-Hydrodynamics Simulations of a Laser-Driven Experiment.*

The connection between experiment and simulation is synergistic, with each benefiting the other. Computational physicists use experimental data to validate simulations by comparing results from both and including, whenever known, experimental and computational error bars. Researchers use simulations to assist in the design of experiments by exploring the effects of different proposed experimental conditions on the desired goals of the project.

The Omega laser facility at the University of Rochester has been used to evaluate instabilities in beryllium, a candidate for capsule ablator material for the National Ignition Facility. We have used a two-dimensional radiation-hydrodynamics code to simulate these experiments, with a goal of matching results for hohlraum radiation temperature, and preheat and shock breakout in beryllium. By incorporating physics-based corrections into our calculations, we improved agreement between experiments and simulations. We describe several results from calculations, indicating those that are validated by experimental data and assessing possible limitations of the models in the code, which may preclude validation. (Received August 16, 2007)