

Abstract Submitted
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Tabulating a Multiphase Equation Of State GEOFFREY COX,
Atomic Weapons Establishment — In a hydrocode simulation the knowledge of pressure as a function of density and energy is needed to solve the hydrodynamic equations. This is obtained from the equation of state (EoS) of a material. For routine use the EoS should be accurate, time efficient, and robust. It is thus advantageous for complex models to tabulate the EoS beforehand, and during the hydrocode simulation to interpolate (or extrapolate) using this grid. A common EoS table format is the SESAME format developed at LANL. However, when this format was developed EoS models that accurately capture the discontinuous changes seen with phase transitions were not commonplace. This talk describes additions to the SESAME format that provide a route for tabulating a multiphase EoS. The final product is found to give an accurate and robust response as well as having an acceptable time penalty.

Geoffrey Cox
Atomic Weapons Establishment

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