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Combined Radiometry and Velocimetry for Phase Change Detection in Shock Loaded Tin DAVID HOLTkamp, DARCIE DENNIS-KOLLER, CARL GREEFF, MICHAEL PRIME, PAULO RIGG, Los Alamos National Laboratory — Reliable detection of phase transitions in multiphase materials studied in dynamic experiments has been a continuing challenge in shock physics. We report results from simultaneous radiometry and velocimetry measurements of dynamically loaded tin under a LiF window. When tin melts on release at the tin/LiF interface, a radiometric signature is observed at multiple wavelengths along with the velocimetry signature. The temperature of the tin/LiF interface is also obtained. Calculations of melt on release using a multiphase EOS for tin provide additional insight into the dynamics of the material when compared to the observables.

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