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Expansion of a foil tracer and wall shocks as diagnostics for supersonic radiation flow in a foam tube KATIE MUSSACK, J. MARTIN TACCETTI, KUNEGUNDA BELLE, BARBARA DEVOLDER, PAUL KEITER, NICK LANIER, GLENN MAGELSSEN, Los Alamos National Laboratory — Modeling radiation transport is complicated by the flow of radiation across boundaries between different materials. Methods such as gray diffusion, multigroup diffusion, and Implicit Monte Carlo (IMC) lead to differences in the calculated heating of materials. We have conducted laboratory experiments at the Omega Laser Facility for the purpose of radiation transport modeling and diagnostic development. A laser-heated Au hohlraum is used as a thermal source to drive supersonic radiation through a foam-filled Be tube containing a Ti foil tracer. X-ray radiographs show the expanding Ti foil tracer and the shocked Be wall which provide information about the radiation flow through the foam and the absorption of energy in the Ti foil and Be wall. These results are compared with simulations to evaluate radiation transport methods.

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