Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Simulations of Radiation Flow in Inhomogeneous Foams M.A. GUNDERSON, P. KEITER, Los Alamos National Laboratory, J. FOSTER, P. ROSEN, A. COMLEY, M. TAYLOR, AWE — Radiation flow through inhomogeneous materials has been of great interest in many areas, including astrophysics applications. However, experiments to study this phenomenon have proven very challenging. The experiment is made up of a scale-one OMEGA halfraum with an attached gold tube filled with various foam-gold mixtures or pure foams. While we have had success in modeling the pure foam and the fine gold particle (less than 0.5 micron) "atomically" loaded foams, M-band radiation from the halfraum was preheating the inhomogeneous mixture. By increasing the gold particle sizes from 1-2 microns up to 5-9 microns, it appears that this problem has been mitigated. Gated x-ray imagers filtered to look at both 300 and 500 eV spectral bands were used as the primary diagnostic in determining the location of the temperature front through diagnostics slots in the gold tube. Comparisons between experimental data and simulations will be shown with the pure foam and "atomically" loaded foam-gold mixtures as the bounding cases. Work supported by US DOE/NNSA, performed at LANL, operated by LANS LLC under Contract DE-AC52-06NA25396.

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Date submitted: 20 Jul 2007 Electronic form version 1.4