

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Simulations of Radiative Shock Experiments for Omega F.W.
DOSS, R.P. DRAKE, University of Michigan, A. REIGHARD, H.F. ROBEY, L.
SUTER, Lawrence Livermore National Laboratory — Astrophysical systems in
which radiation transport across a shock front contributes substantially to the prop-
erties and dynamics of the system may be modeled in laboratory experiments under
high-energy-density conditions. Recent experiments on the Omega laser facility have
launched drive disks of Be into shock tubes of Xe gas at atmospheric pressure to
produce radiating shocks, which are then diagnosed for structure and density pro-
file by x-ray pinhole radiography. A series of radiation-hydrodynamics simulations
using the code HYDRA have been produced, exploring the predicted results of ex-
periments of this type. The simulations will assist in our target design process and
in choosing which experiments should be run to obtain maximum information of
interest. This research was sponsored by the NNSA through DOE Research Grants
DE-FG52-07NA28058, DE-FG52-04NA0064, and the NNSA Stewardship Science
Graduate Fellowship.

Forrest Doss
University of Michigan

Date submitted: 09 Jan 2008

Electronic form version 1.4