

Abstract Submitted  
for the DPP08 Meeting of  
The American Physical Society

**Shock experiments with magnetically accelerated flyer plates<sup>1</sup>**

STEPHAN NEFF, SANDRA WRIGHT, DAVID MARTINEZ, CHRISTOPHER PLECHATY, RADU PRESURA, University of Nevada, Reno — The interaction of shock waves with inhomogeneous media is important in many astrophysical phenomena. Modelling these phenomena in the laboratory yields additional information to improve both simulations and the interpretation of astrophysical observations. Scaled experiments using magnetically accelerated flyers impacting on low density foam targets have been proposed for the Z machine at the Sandia National Laboratories (R.P. Drake, Phys. Plasmas 2002). Carrying out such experiments on smaller machines like the UNR pulsed power generator Zebra reduces the costs significantly and thus enables a broader scan of experimental parameters. Our experiments at the Nevada Terawatt Facility study the flyer acceleration (reaching flyer velocities of up to 5 km/s) and the impact of the flyers on transparent targets with low sound speeds in order to create shock waves. Optical diagnostics are used to study the interaction of the flyers with the transparent target.

<sup>1</sup>Supported by the DOE/NNSA grant DE-FC52-06NA27616.

Stephan Neff  
University of Nevada, Reno

Date submitted: 18 Jul 2008

Electronic form version 1.4