Abstract Submitted
for the SHOCK13 Meeting of
The American Physical Society

A multi-point radial photonic Doppler velocimetry (PDV) diagnostic for cylindrical implosion experiments DEVON DALTON, DANIEL DOLAN, RAYMOND LEMKE, RYAN MCBRIDE, MATTHEW MARTIN, ERIC HARDING, Sandia National Laboratories, SCOTT WALKER, National Security Technologies — Radial photonic Doppler velocimetry (PDV) has been successfully applied in cylindrical implosion experiments fielded on Sandia's Z accelerator. Magnetically driven cylinders have been diagnosed well beyond 20 km/s, using a "leapfrog" configuration to address the bandwidth limitations of currently available detectors and digitizers. Implosion symmetry is the latest question this diagnostic will attempt to answer. An innovative multi-point configuration is being developed to allow six concurrent measurements during each experiment. This presentation describes the implementation of radial PDV in this extreme environment. Sandia National Labs is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corp., for the U.S. Dept. of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

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Date submitted: 19 Feb 2013 Electronic form version 1.4