Abstract Submitted
for the SHOCK17 Meeting of
The American Physical Society

Miniaturized Asay foil assemblies for measurement of ejecta mass.[1] PAUL STEELE, STEVE COMPTON, BARRY JACOBY, LOUIS FERRANTI, JOHN DENSMORE, DANIAL PHILLIPS, JOSE O. SINIBALDI[2], Lawrence Livermore Natl Lab — An Asay foil diagnostic consists primarily of a metal foil suspended over an ejecta source. As ejecta strike the foil, they transfer momentum to it. The velocity of the foil is measured using Photonic Doppler Velocimetry (PDV). In subsequent data analysis, the foil velocity reveals the foil momentum, which is related to ejecta momentum. If ejecta velocity is known, ejecta momentum is easily converted to ejecta mass. In historical experiments at Lawrence Livermore National Laboratory, a 6mm diameter, 100um thick, titanium-alloy foil was simply placed over a 5mm hole in a mask. This basic design has been shown to produce results consistent with radiography. Recent work has succeeded in producing a miniature assembly matching the diameter of common piezoelectric pins (2.4mm) that can be used in any orientation with respect to gravity. Testing has already shown performance matching that of the larger historical design. Experiments are planned to compare directly with radiography. LLNL-ABS-723838

[1]Prepared by LLNL under Contract DE-AC52-07NA27344
[2]Presenting

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Date submitted: 16 Feb 2017 Electronic form version 1.4