Abstract Submitted
for the SHOCK19 Meeting of
The American Physical Society

Perturbation Decay Experiments on Granular Materials[1] TRACY VOGLER, MARCIA COOPER, Sandia National Laboratories — The perturbation decay experiment has been utilized to evaluate the strength of granular materials under shock loading. Previous work has shown that material strength slows the decay of a perturbation superimposed on a propagating shock front. A novel configuration has been developed that relies on the change of optical reflectivity of a metal-coated surface during shock arrival to diagnose the shock evolution. The technique has been applied to tungsten carbide powder, tantalum powder, and mixtures of the two. Results from continuum and mesoscale calculations will also be shown. Finally, we will discuss the use of radiography for diagnosing perturbation decay experiments.

[1]Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and Engineering Solutions of Sandia LLC, a wholly owned subsidiary of Honeywell International Inc. for the U.S. Department of Energys National Nuclear Security Administration under contract DE-NA0003525.

Tracy Vogler
Sandia National Laboratories

Date submitted: 19 Feb 2019 Electronic form version 1.4