

Abstract Submitted  
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**Shock Ejecta Entrainment in Gas**<sup>1</sup> MICHAEL FURNISH, Sandia National Laboratories — Paired tin shock ejecta experiments, with and without gas fill, are used to study the ability of optical velocimetry diagnostics (specifically, PDV) to track ejecta motion. The vacuum ejecta experiments use Asay foils and PDV to characterize ejecta properties, and the gas ejecta experiments use PDV. FFT analysis of the PDV signals gives at least a qualitative indication of the presence of such ejecta and of its motion. Can quantitative information about the areal density of the ejecta be obtained from the PDV records? For modest amounts of ejecta (allowing enough light to reach the free surface and return to the probe to give a strong free surface velocity signal), the FFT amplitudes are roughly proportional to the ejecta areal density, where the proportionality constant depends on the shape and size distribution of the ejecta particles (which is consistent for the two samples in each pair). A caveat is that PDV only measures the motion of ejecta with particle sizes exceeding the 1550 nm light wavelength.

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