

Abstract Submitted
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**Hydrocode Postprocessing Study of Optical Signatures from
Fragment Distributions** P.K. SWAMINATHAN, J.C. TAYLOR, Johns Hopkins
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Hypervelocity impact fragments generate optical signatures that provide key infor-
mation about the shock-induced fragmentation behavior at high strain rates. This is
because of a key dependence on fragment temperatures and size distributions which
in turn vary according to the thermodynamics of energy partitioning and material
behavior under high strain rates. We have carried out CTH calculations of the
widely experimented case of spheres on plates to simulate the material response.
Fragmentation patterns generated according to different fracture models of response
under calculated strain are used to predict optical signatures from the resultant de-
bris cloud. For prediction of optical signatures, several challenges need to be faced
including CTH incorporation of accurate temperature dependent equations of state
and large strain rate fragmentation models.

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