Abstract Submitted
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Shock Propagation and Attenuation in Green River Oil Shale
DENNIS GRADY, Applied Research Associates — Shock waves produced by planar impact of thin plates onto samples of oil shale are monitored with time-resolved velocity interferometer diagnostics. Peak shock stresses are below the Hugoniot elastic limit. Stress wave measurements at successive sample thickness are analyzed to determine the experimental shock energy attenuation with propagation distance. Shock attenuation is attributed to stress wave scattering at planes of oil shale kerogen within the shale matrix. Wave scattering from planar defects is evaluated from a shock physics perspective and a scattering model is constructed that sensibly reproduces the experimental measurements of shock energy attenuation in oil shale.

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