

Abstract Submitted
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Shock Attenuation in Distended Solids DENNIS GRADY, Applied Research Associates — There are many applications in which attenuation of the intensity of a shock wave with propagation distance is of concern. Classic solutions include the Sedov-Taylor similarity solution for air blast shocks, and the analytic solutions of Kompaneets for shock attenuation in solid compacting media. When the governing physics of shock compression does not introduce a characteristic length scale the dependence of field variables are necessarily power-law dependent on distance. Even when length scales emerge from the physics, domains of asymptotic power-law dependence can emerge. The present paper describes an analytic solution of shock attenuation in distended media that illustrates asymptotic power-law attenuation bounded by physical length scales that emerge from the material constitutive description.

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