DETERMINATION OF CONSTITUTIVE RELATIONS FROM PLANE WAVE EXPERIMENTS[†]

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ABSTRACT

Recent developments in experimental methods for measuring the characteristics of plane compression waves are reviewed, and analytical methods for inferring constitutive relations from measured wave profiles are discussed. A general method, requiring only pressure or particle velocity measurements, is proposed that is applicable to arbitrary waves in which equilibrium or steady state may not obtain. A summary of current knowledge of constitutive relations obtained from plane wave experiments is also presented.

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