Kolsky Stress Waves In Solids

Ultrasonic Guided Waves in Solid Media
Stress Waves in Non-elastic Solids
Waves in Elastic and Viscoelastic Solids
Applied Mechanics Reviews
Stress Wave Propagation in Solids
Strain Solitons in Solids and How to Construct Them
Foundations of Stress Waves
Shock Wave Science and Technology Reference Library, Vol. 2
Wave Processes in Classical and New Solids
Stress Waves in Anelastic Solids
Shock Waves in Solid State Physics
Stress Waves in Solids
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Mechanical Waves in Solids
International Symposium on Stress Wave Propagation in Materials
Propagation of Shock Waves in Solids
Elastic Waves in Solids I
Solid State Physics
Wave Propagation in Elastic Solids
On Wave Propagation in Elastic Solids with Cracks
Proceedings of the International Symposium on Stress Waves in Anelastic Solids, Providence, 1963

Shock Waves and the Mechanical Properties of Solids
Wave Propagation in Elastic Solids
Mechanical Behaviour of Engineering Materials
Mechanical waves in solids
Stress Transients in Solids
Ultrasonic Guided Waves in Solid Media
Explosive Welding, Forming and Compaction
Advances in Applied Mechanics
Wave Propagation in Solids
Stress Waves in Non-Elastic Solids
Split Hopkinson (Kolsky) Bar
Fundamentals of Shock Wave Propagation in Solids
The Shock and Vibration Digest
Material Behavior Under High Stress and Ultrahigh Loading Rates
Shock Wave Science and Technology Reference Library, Vol. 3
Classical and Computational Solid Mechanics
Wave Motion in Elastic Solids
Nonlinear Waves in Solids

MARLEY LILIAN

Ultrasonic Guided Waves in Solid Media
Courier Corporation
The authors systematically describe the general principles of Kolsky bars, or split Hopkinson bars, which are widely used for obtaining dynamic material properties. Modifications are introduced for

obtaining reliable data. Specific experiment design guidelines are provided to subject the specimen to desired testing conditions. Detailed Kolsky-bar examples are given for different classes of materials (brittle, ductile, soft, etc) and for different loading conditions (tension, torsion, triaxial, high/low temperatures, intermediate strain rate, etc). The Kolsky bars used for dynamic structural characterization are briefly introduced. A collection of dynamic properties of various materials under various testing conditions is included which may serve as a reference database. This book assists both beginners and experienced professionals in characterizing high-rate material response with high quality and consistency. Readers who may benefit from this work include university students, instructors, R & D professionals, and scholars/engineers in solid mechanics, aerospace, civil and mechanical engineering, as well as materials science and engineering.

Stress Waves in Non-elastic Solids Springer

Wave propagation in solids has been widely studied and principal advances in this field have been achieved not only for the improvements of calculus methods, but also for the high progresses attained in the description of new types of materials. This book presents innovative and original

research studies describing some enhancement in both directions. In particular, the first section is devoted to the propagation of waves in complex materials and related dispersion relations are deeply investigated. Instead the second section is dedicated to new applications for the study of wave processes in classical solids; the emphasis is posed on various simulation availabilities in the fields of seismology, damaging, geomaterials and multi-wave propagation. The audience includes students, engineers and advanced scientists with knowledge of wave propagation in solids.

Waves in Elastic and Viscoelastic Solids BoD – Books on Demand

This book is the first of several volumes on solids in the Shock Wave Science and Technology Reference Library. This is a unique collection, and the library as a whole sets out to comprehensively and authoritatively cover and review at research level the subject matter with all its ramifications. All the chapters are self-contained and can be read independently of each other, though they are of course thematically interrelated.

Applied Mechanics Reviews Springer Science & Business Media

This monograph consists of two volumes and provides a unified,

comprehensive presentation of the important topics pertaining to the understanding and determination of the mechanical behaviour of engineering materials under different regimes of loading. The large subject area is separated into eighteen chapters and four appendices, all self-contained, which give a complete picture and allow a thorough understanding of the current status and future direction of individual topics. Volume I contains eight chapters and three appendices, and concerns itself with the basic concepts pertaining to the entire monograph, together with the response behaviour of engineering materials under static and quasi-static loading. Thus, Volume I is dedicated to the introduction, the basic concepts and principles of the mechanical response of engineering materials, together with the relevant analysis of elastic, elastic-plastic, and viscoelastic behaviour. Volume II consists of ten chapters and one appendix, and concerns itself with the mechanical behaviour of various classes of materials under dynamic loading, together with the effects of local and microstructural phenomena on the response behaviour of the material. Volume II also contains selected topics concerning intelligent material systems, and pattern recognition and

classification methodology for the characterization of material response states. The monograph contains a large number of illustrations, numerical examples and solved problems. The majority of chapters also contain a large number of review problems to challenge the reader. The monograph can be used as a textbook in science and engineering, for third and fourth undergraduate levels, as well as for the graduate levels. It is also a definitive reference work for scientists and engineers involved in the production, processing and applications of engineering materials, as well as for other professionals who are involved in the engineering design process.

Stress Wave Propagation in Solids

Academic Press

This book is the second volume of Solids Volumes in theShockWaveScience and Technology Reference Library. These volumes are primarily concerned with high-pressure shock waves in solid media, including detonation and hi-velocity impact and penetration events. This volume contains four articles. The ?rst two describe the reactive behavior of condensed-phase explosives, and the remaining two discuss the inert, mechanical response of solid materials. The articles are each se- contained, and can be read

independently of each other. They o?er a timely reference, for beginners as well as professional scientists and engineers, cov- ing the foundations and the latest progress, and include burgeoning devel- ment as well as challenging unsolved problems. The ?rst chapter, by S. She?eld and R. Engelke, discusses the shock initiation and detonation phenomena of solids explosives. The article is an outgrowth of two previous review articles: “Explosives” in vol. 6 of En- clopedia of Applied Physics (VCH, 1993) and “Initiation and Propagation of Detonation in Condensed-Phase High Explosives” in High-Pressure Shock Compression of Solids III (Springer, 1998). This article is not only an - dated review, but also o?ers a concise heuristic introduction to shock waves and condensed-phase detonation. The authors emphasize the point that d- onation is not an uncontrollable, chaotic event, but that it is an orderly event that is governed by and is describable in terms of the conservation of mass, momentum, energy and certain material-speci?c properties of the explosive.

Strain Solitons in Solids and How to Construct Them

Springer Science & Business Media

Begins with both a non-hypersingular time-domain traction boundary integral equation formulation for transient elastodynamic crack

analysis and a time-stepping scheme for solving the boundary integral equations. The scheme is applied to analyze three-dimensional rectangular and penny-shaped cracks, and to investigate pulse shape effects on the dynamic stress intensity factor. The corresponding frequency-domain boundary integral equation is given, and time- harmonic wave propagation in randomly cracked solids is treated. The second half of the book deals with the elastodynamic analysis of a periodic array of cracks in plane strain and of anti-plane interface cracks between two different materials, and the effect of the material anistrophy on the near-tip quantities, the scattered far-field, and wave attenuation and dispersion. No index. Annotation copyrighted by Book News, Inc., Portland, OR

Foundations of Stress Waves

Springer

Methods and the latest results of experimental studies of the strength properties, polymorphism and metastable states of materials and substances with extremely short durations of shock-wave action are presented. The author provides a comprehensive and theoretical description of specific features of the dynamics of elastoplastic shock compression waves in relaxing media. The presentation is preceded by a detailed

description of the theoretical foundations of the method and a brief discussion of the basic methods of generating and diagnosing shock waves in solids. Key Selling Features: Addresses dynamic elastic-plastic response, spallation, and shock-induced phase transformation. Provides a centralized presentation of topics of interest to the shock physics community Presents new data on the mechanism and basic patterns of sub-microsecond polymorphic transformations and phase transitions. Investigates destruction waves in shock-compressed glasses. Analyzes the behavior of highly hard brittle materials under shock-wave loading and ways to diagnose fracture.

Shock Wave Science and Technology Reference Library, Vol. 2 Elsevier

Solid State Physics

Wave Processes in Classical and New Solids World Scientific

An advanced 1999 text for those working in materials science and related inter-disciplinary subjects.

Stress Waves in Anelastic Solids Springer Science & Business Media

Wave Processes in Solids with Microstructure is useful for undergraduates, graduate students, researchers and practitioners in the mechanics of solids as well as in physical and technical acoustics.

Shock Waves in Solid State Physics Cambridge University

Press
Advances in Applied Mechanics
Stress Waves in Solids
North-Holland
Ultrasonic guided waves in solid media are important in nondestructive testing and structural health monitoring, as new faster, more sensitive, and economical ways of looking at materials and structures have become possible. This book can be read by managers from a "black box" point of view, or used as a professional reference or textbook.

Wave Processes in Solids with Microstructure
Springer
The last two decades have seen a steady and impressive development, and eventual industrial acceptance, of the high energy-rate manufact turing techniques based on the utilisation of energy available in an explo sive charge. Not only has it become economically viable to fabricate complex shapes and integrally bonded composites- which otherwise might not have been obtainable easily, if at all-but also a source of reasonably cheap energy and uniquely simple techniques, that often dispense with heavy equipment, have been made available to the engineer and applied scientist. The consolidation of theoretical knowledge and practical experience which we have witnessed in this area of activity in the last few years, combined with the growing industrial interest in the

explosive forming, welding and compacting processes, makes it possible and also opportune to present, at this stage, an in-depth review of the state of the art. This book is a compendium of monographic contributions, each one of which represents a particular theoretical or industrial facet of the explosive operations. The contributions come from a number of practising engineers and scientists who seek to establish the present state of knowledge in the areas of the formation and propagation of shock and stress waves in metals, their metallurgical effects, and the methods of experimental assessment of these phenomena.

Fractography Springer Science & Business Media

The Army Materials and Mechanics Research Center in coopera tion with the Materials Science Group of the Department of Chemical Engineering and Materials Science of Syracuse University has been conducting the Annual Sagamore Army Materials Research Conference since 1954. The specific purpose of these conferences has been to bring together scientists and engineers from academic institutions, industry, and government who are uniquely qualified to explore in depth a subject of importance to the Department of Defense, the Army, and the scientific

community. The proceedings of this conference, entitled MATERIAL BEHAVIOR UNDER HIGH STRESS AND ULTRAHIGH LOADING RATES, will be published in two parts. The topics covered in the present volume include dynamic plasticity, adiabatic shear/localized deformation, and dynamic fracture mechanics. Papers dealing with ordnance applica tions, projectile launch environment, and recent work-in-progress will appear as an AMMRC Technical Report and will have more limited distribution in accordance with recent Army guidelines. The Conference Chairmen are particularly grateful to the members of the Program Committee. We wish also to acknowledge the assistance of Mr. Charles Polley of the Army Materials and Mechanics Research Center, Mr. Robert Sell, Ms. Helen Brown DeMascio, and Ms. Mary Ann Holmquist of Syracuse University throughout the con ference planning stages and the publication of the text. The continued active interest in and support of these confer ences by Dr. E. Wright and Col. George Sibert, Direct and Deputy Director/Commander, respectively, of the Army Materials and Mechan ics Research Center, is appreciated. *Mechanical Waves in Solids* World Scientific Although the subject of wave propagation in solids has a long

history, the classical theory of elastic waves having been developed in the nine teenth century by STOKES, POISSON, RAYLEIGH and KELVIN, the last two decades have seen a remarkable revival of interest in this subject among both theoreticians and experimenters. There' are a number of reasons for this; first, experimental methods for the generation and detection of high frequency mechanical waves have become available only with the advent of electronic techniques and of high speed photo graphic recording apparatus. Secondly, the appearan

International Symposium on Stress Wave Propagation in Materials Academic Press

The propagation of mechanical disturbances in solids is of interest in many branches of the physical scienses and engineering. This book aims to present an account of the theory of wave propagation in elastic solids. The material is arranged to present an exposition of the basic concepts of mechanical wave propagation within a one-dimensional setting and a discussion of formal aspects of elastodynamic theory in three dimensions, followed by chapters expounding on typical wave propagation phenomena, such as radiation, reflection, refraction, propagation in waveguides, and diffraction. The treatment necessarily

involves considerable mathematical analysis. The pertinent mathematical techniques are, however, discussed at some length.

Propagation of Shock Waves in Solids

Elsevier

Stress Waves in Non-Elastic Solids is a comprehensive presentation of the principles underlying the propagation of stress waves in non-elastic solids, with emphasis on wave problems in the theory of plasticity. This book exposes wave propagation problems for a range of material responses and justifies the hypotheses introduced in specialized theories and the simplifications made in the analysis of particular problems. Both analytical and numerical methods of solving problems are described, and a large number of solutions to specific problems of wave propagation in inelastic solids are given. This book is comprised of six chapters and begins with an overview of the fundamental equations of the dynamics of inelastic media. The dynamical properties of metals and soils are discussed, offering an account of the most representative theories of plasticity and viscoplasticity. The next chapter considers the basic definitions of discontinuity surfaces and the conditions that must to be satisfied across these surfaces. Certain mathematical fundamentals are given, referring to systems of differential equations, quasi-linear

and semi-linear, of the first order. Initial and boundary value problems for hyperbolic equations are also formulated. The remaining chapters focus on methods of solving stress wave propagation problems, including one-dimensional plane waves and longitudinal-transverse waves. Wave propagation problems for elastic-plastic and elastic/viscoplastic media are treated in detail, along with the most important problem of shock waves in metals and soils. The last chapter deals with thermal wave propagation problems. This monograph will be a valuable resource for students and practitioners of engineering, physics, and mathematics.

Elastic Waves in Solids I CRC Press

Self-contained coverage of topics ranging from elementary theory of waves and vibrations in strings to three-dimensional theory of waves in thick plates. Over 100 problems.

Solid State Physics Springer Science & Business Media

The propagation of mechanical disturbances in solids is of interest in many branches of the physical scienses and engineering. This book aims to present an account of the theory of wave propagation in elastic solids. The material is arranged to present an exposition of the basic concepts of mechanical wave propagation within a

one-dimensional setting and a discussion of formal aspects of elastodynamic theory in three dimensions, followed by chapters expounding on typical wave propagation phenomena, such as radiation, reflection, refraction, propagation in waveguides, and diffraction. The treatment necessarily involves considerable mathematical analysis. The pertinent mathematical techniques are, however, discussed at some length.

Wave Propagation in Elastic Solids Elsevier

Although the theory behind solitary waves of strain shows that they hold significant promise in nondestructive testing and a variety of other applications, an enigma has long persisted-the absence of observable elastic solitary waves in practice. Inspired by this apparent contradiction, Strain Solitons in Solids and How to Construct Them refines th

Murder By David Grann
• The Silent Patient By Alex Michaelides
• It's Not Summer Without You
• You Will Own Nothing: Your War With A New Financial World Order And How To Fight Back By Carol Roth