Continuum Mechanics Notes Brown University

Modern computer simulations make stress analysis easy. A
they continue to replace classical mathematical methods o
analysis, these software programs require users to have a
solid understanding of the fundamental principles on which
they are based.Develop Intuitive Ability to Identify and Avoid
Physically Meaningless PredictionsApplied Mechanics o
Overall, our object has been to provide an applications-
oriented text that is reasonably self-contained. It has been
used as the basis for a graduate-level course both at the
University of Waterloo and at the Centro Studie Applicazion
in Tecnologie Avante, Bari, Italy. The text is aimed, in the
main, at applied mathematicians with a strong interest in
physical applications or at engineers working in theoretical
mechanics.

Introductory Continuum Mechanics with Applications to
Elasticity (Revised Edition)Cognella Academic Pub
This book is a liber amicorum to Professor Sergei
Konstantinovich Godunov and gathers contributions by
renowned scientists in honor of his 90th birthday. The
contributions address those fields that Professor Godunov
most famous for: differential and difference equations,
partial differential equations, equations of mathematical
physics, mathematical modeling, difference schemes,
advanced computational methods for hyperbolic equations,
computational methods for linear algebra, and mathematical
problems in continuum mechanics.

Continuum Mechanics Through the Eighteenth and

Nineteenth Centuries

A Collection of Papers Dedicated to J.L. Ericksen on His Sixtieth Birthday

A Directory of Information Resources in the United States Physical Sciences, Engineering

The Breadth and Depth of Continuum Mechanics

Continuum Mechanics through the Ages - From the Renaissance to the Twentieth Century

Fractals and Fractional Calculus in Continuum Mechanics

This publication is aimed at students, teachers, and researchers of Continuum Mechanics and focused extensively on stating and developing Initial Boundary Value equations used to solve physical problems. With respect to notation, the tensorial, indicial and Voigt notations have been used indiscriminately. The book is divided into twelve chapters with the following topics: Tensors, Continuum Kinematics, Stress, The Objectivity of Tensors, The Fundamental Equations of Continuum Mechanics, An Introduction to Constitutive Equations, Linear Elasticity, Hyperelasticity, Plasticity (small and large deformations), Thermoelasticity (small and large deformations), Damage Mechanics (small and large deformations), and An Introduction to Fluids. Moreover, the text is supplemented with over 280 figures, over 100 solved problems, and 130 references.

A concise yet comprehensive treatment of the fundamentals of solid mechanics, including solved examples, exercises, and homework

problems.

Mixing scientific, historic and socio-economic vision, this unique book complements two previously published volumes on the history of continuum mechanics from this distinguished author. In this volume, Gérard A. Maugin looks at the period from the renaissance to the twentieth century and he includes an appraisal of the ever enduring competition between molecular and continuum modelling views. Chapters trace early works in hydraulics and fluid mechanics not covered in the other volumes and the author investigates experimental approaches, essentially before the introduction of a true concept of stress tensor. The treatment of such topics as the viscoelasticity of solids and plasticity, fracture theory, and the role of geometry as a cornerstone of the field, are all explored. Readers will find a kind of socio-historical appraisal of the seminal contributions by our direct masters in the second half of the twentieth century. The analysis of the teaching and research texts by Duhem, Poincaré and Hilbert on continuum mechanics is key: these provide the most valuable documentary basis on which a revival of continuum mechanics and its formalization were offered in the late twentieth century. Altogether, the three volumes offer a generous conspectus of the developments of continuum mechanics between the sixteenth century and the dawn of the twenty-first century. Mechanical engineers, applied

mathematicians and physicists alike will all be interested in this work which appeals to all curious scientists for whom continuum mechanics as a vividly evolving science still has its own mysteries.

An updated and expanded edition of the popular guide to basic continuum mechanics and computational techniques This updated third edition of the popular reference covers state-of-the-art computational techniques for basic continuum mechanics modeling of both small and large deformations. Approaches to developing complex models are described in detail, and numerous examples are presented demonstrating how computational algorithms can be developed using basic continuum mechanics approaches. The integration of geometry and analysis for the study of the motion and behaviors of materials under varying conditions is an increasingly popular approach in continuum mechanics, and absolute nodal coordinate formulation (ANCF) is rapidly emerging as the best way to achieve that integration. At the same time, simulation software is undergoing significant changes which will lead to the seamless fusion of CAD, finite element, and multibody system computer codes in one computational environment. Computational Continuum Mechanics, Third Edition is the only book to provide in-depth coverage of the formulations required to achieve this integration. Provides detailed coverage of the absolute nodal coordinate formulation (ANCF), a

popular new approach to the integration of
geometry and analysis Provides detailed
coverage of the floating frame of reference
(FFR) formulation, a popular well-established
approach for solving small deformation
problems Supplies numerous examples of how
complex models have been developed to solve
an array of real-world problems Covers
modeling of both small and large deformations
in detail Demonstrates how to develop
computational algorithms using basic
continuum mechanics approaches Computational
Continuum Mechanics, Third Edition is
designed to function equally well as a text
for advanced undergraduates and first-year
graduate students and as a working reference
for researchers, practicing engineers, and
scientists working in computational
mechanics, bio-mechanics, computational
biology, multibody system dynamics, and other
fields of science and engineering using the
general continuum mechanics theory.
Multiscale Modeling in Continuum Mechanics
and Structured Deformations
Summaries of Projects Completed in Fiscal
Year ...
U.S. Government Research & Development
Reports
Mechanics of Solids
Symposium Held in San Antonio, Texas,
September 6-8, 1967
Intermediate Solid Mechanics
Continuum Mechanics of Solids is an

introductory text for graduate students in the many branches of engineering, covering the basics of kinematics, equilibrium, and material response. As an introductory book, most of the emphasis is upon the kinematically linear theories of elasticity, plasticity, and viscoelasticity, with two additional chapters devoted to topics in finite elasticity. Further chapters cover topics in fracture and fatigue and coupled field problems, such as thermoelasticity, chemoelasticity, poroelasticity, and piezoelectricity. There is ample material for a two semester course, or by selecting only topics of interest for a one-semester offering. The text includes numerous examples to aid the student. A companion text with over 180 fully worked problems is also available.

This book presents a systematic treatise on micromechanics and nanomechanics, which encompasses many important research and development areas such as composite materials and homogenizations, mechanics of quantum dots, multiscale analysis and mechanics, defect mechanics of solids including fracture and dislocation mechanics, etc. In this second edition, some previous chapters are revised, and some new chapters added — crystal

plasticity, multiscale crystal defect dynamics, quantum force and stress, micromechanics of metamaterials, and micromorphic theory. The book serves primarily as a graduate textbook and intended as a reference book for the next generation of scientists and engineers. It also has a unique pedagogical style that is specially suitable for self-study and self-learning for many researchers and professionals who do not have time attending classes and lectures. Translation of hugely successful book aimed at advanced undergraduates, graduate students and researchers. An updated account of the state of the art in the subject, presenting recent progress in two active and related areas of continuum mechanics: fracture mechanics and structured deformations. Cosserat Continuum Mechanics Historical Perspectives from John Bernoulli (1727) to Ernst Hellinger (1914) Mechanical Behavior of Materials under Dynamic Loads Summaries of Projects Completed Continuum Mechanics and Thermodynamics A Dictionary Multi-scale modelling of composites is a very relevant topic in composites science. This is illustrated by the numerous sessions in the recent European and

International Conferences on Composite Materials, but also by the fast developments in multi-scale modelling software tools, developed by large industrial players such as Siemens (Virtual Material Characterization toolkit and MultiMechanics virtual testing software), MSC/e-Xstream (Digimat software), Simulia (micromechanics plug-in in Abaqus), HyperSizer (Multi-scale design of composites), Altair (Altair Multiscale Designer) This book is intended to be an ideal reference on the latest advances in multi-scale modelling of fibre-reinforced polymer composites, that is accessible for both (young) researchers and end users of modelling software. We target three main groups: This book aims at a complete introduction and overview of the state-of-the-art in multi-scale modelling of composites in three axes: • ranging from prediction of homogenized elastic properties to nonlinear material behaviour • ranging from geometrical models for random packing of unidirectional fibres over meso-scale geometries for textile composites to orientation tensors for short fibre composites • ranging from damage modelling of unidirectionally reinforced composites over textile composites to short fibre-reinforced composites The book covers the three most important scales in multi-scale modelling of composites: (i) micro-scale, (ii) meso-scale and (iii) macro-scale. The nano-scale and related atomistic and molecular modelling approaches are deliberately excluded, since the book wants to focus on continuum mechanics and there are already a lot of dedicated books about polymer nanocomposites. A strong focus is put on physics-based damage modelling, in the sense that the chapters devote attention to modelling the different damage mechanisms (matrix cracking, fibre/matrix debonding, delamination, fibre fracture,...) in such a way that the underlying

physics of the initiation and growth of these damage modes is respected. The book also gives room to not only discuss the finite element based approaches for multi-scale modelling, but also much faster methods that are popular in industrial software, such as Mean Field Homogenization methods (based on Mori-Tanaka and Eshelby solutions) and variational methods (shear lag theory and more advanced theories). Since the book targets a wide audience, the focus is put on the most common numerical approaches that are used in multi-scale modelling. Very specialized numerical methods like peridynamics modelling, Material Point Method, eXtended Finite Element Method (XFEM), isogeometric analysis, SPH (Smoothed Particle Hydrodynamics),... are excluded. Outline of the book The book is divided in three large parts, well balanced with each a similar number of chapters:

Advances in Applied Mechanics

For comprehensive—and comprehensible—coverage of both theory and real-world applications, you can't find a better study guide than Schaum's Outline of Continuum Mechanics. It gives you everything you need to get ready for tests and earn better grades! You get plenty of worked problems—solved for you step by step—along with hundreds of practice problems. From the mathematical foundations to fluid mechanics and viscoelasticity, this guide covers all the fundamentals—plus it shows you how theory is applied. This is the study guide to choose if you want to ace continuum mechanics!

This volume contains a selection of the invited papers presented at a LMS Durham Symposium on modern developments in non-classical continuum mechanics. A major aim was to bring together workers in both the abstract and practical aspects of the subject in order to

achieve enhanced appreciation of each others' approach and hence of the mathematical techniques and physical intuition essential for successful research in this field. As a result, the present collection consists of a series of concise articles which are introductions to, and succinct accounts of, current activity in many branches of non-classical continuum mechanics. Research workers in applied mathematics, physics, theoretical mechanics, and structural and aeronautical engineering will find much of interest in this collection.

Physical Foundations of Continuum Mechanics
Linear Theories of Elasticity and Thermoelasticity
Notes on Continuum Mechanics
The James R. Rice 60th Anniversary Volume
Continuum Mechanics of Solids
Proceedings of the London Mathematical Society
Symposium, Durham, July 1986

The book is characterized by the illustration of cases of fractal, self-similar and multi-scale structures taken from the mechanics of solid and porous materials, which have a technical interest. In addition, an accessible and self-consistent treatment of the mathematical technique of fractional calculus is provided, avoiding useless complications.
Modern Solid Mechanics considers phenomena at many levels, ranging from nano size at atomic scale through the continuum level at millimeter size to large structures at the tens of meter scale. The deformation and fracture behavior at these various scales are inextricably related to interdisciplinary methods derived from applied mathematics, physics, chemistry, and engineering mechanics. This book, in honor of

James R. Rice, contains articles from his colleagues and former students that bring these sophisticated methods to bear on a wide range of problems. Articles discussing problems of deformation include topics of dislocation mechanics, second particle effects, plastic yield criterion on porous materials, hydrogen embrittlement, solid state sintering, nanophases at surfaces, adhesion and contact mechanics, diffuse instability in geomaterials, and percolation in metal deformation. In the fracture area, the topics include: elastic-plastic crack growth, dynamic fracture, stress intensity and J-integral analysis, stress-corrosion cracking, and fracture in single crystal, piezoelectric, composite and cementitious materials. The book will be a valuable resource for researchers in modern solid mechanics and can be used as reference or supplementary text in mechanical and civil engineering, applied mechanics, materials science, and engineering graduate courses on fracture mechanics, elasticity, plasticity, mechanics of materials or the application of solid mechanics to processing, and reliability of life predictions.

An engineering major's must have: The most comprehensive review of the required dynamics course—now updated to meet the latest curriculum and with access to Schaum's improved app and website! Tough Test Questions? Missed Lectures? Not Enough Time? Fortunately, there's Schaum's. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every

subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you: 729 fully solved problems to reinforce knowledge 1 final practice exam Hundreds of examples with explanations of dynamics concepts Extra practice on topics such as rectilinear motion, curvilinear motion, rectangular components, tangential and normal components, and radial and transverse components Support for all the major textbooks for dynamics courses Access to revised Schaums.com website with access to 25 problem-solving videos and more. Schaum's reinforces the main concepts required in your course and offers hundreds of practice questions to help you succeed. Use Schaum's to shorten your study time - and get your best test scores!

This contributed volume explores the applications of various topics in modern differential geometry to the foundations of continuum mechanics. In particular, the contributors use notions from areas such as global analysis, algebraic topology, and geometric measure theory. Chapter authors are experts in their respective areas, and provide important insights from the most recent research. Organized into two parts, the book first covers kinematics, forces, and stress theory, and then addresses defects, uniformity, and homogeneity. Specific topics covered include: Global stress and hyper-stress theories Applications of de Rham currents to singular dislocations Manifolds of mappings for

continuum mechanics Kinematics of defects in solid crystals Geometric Continuum Mechanics will appeal to graduate students and researchers in the fields of mechanics, physics, and engineering who seek a more rigorous mathematical understanding of the area. Mathematicians interested in applications of analysis and geometry will also find the topics covered here of interest.

Multi-Scale Continuum Mechanics Modelling of Fibre-Reinforced Polymer Composites

From Fundamental Concepts to Governing Equations

A Liber Amicorum to Professor Godunov

From Hydraulics to Plasticity

Introduction to Micromechanics and Nanomechanics

Continuum Models for Phase Transitions and Twinning in Crystals presents the fundamentals of a remarkably successful approach to crystal thermomechanics. Developed over the last two decades, it is based on the mathematical theory of nonlinear thermoelasticity, in which a new viewpoint on material symmetry, motivated by molecular theories, plays a central role. This is the first organized presentation of a nonlinear elastic approach to twinning and displacive phase transition in crystalline solids. The authors develop geometry, kinematics, and energy invariance in crystals in strong connection and with the purpose of investigating the actual mechanical aspects of the phenomena, particularly in an elastostatics

framework based on the minimization of a thermodynamic potential. Interesting for both mechanics and mathematical analysis, the new theory offers the possibility of investigating the formation of microstructures in materials undergoing martensitic phase transitions, such as shape-memory alloys. Although phenomena such as twinning and phase transitions were once thought to fall outside the range of elastic models, research efforts in these areas have proved quite fruitful. Relevant to a variety of disciplines, including mathematical physics, continuum mechanics, and materials science, Continuum Models for Phase Transitions and Twinning in Crystals is your opportunity to explore these current research methods and topics.

This dictionary offers clear and reliable explanations of over 100 keywords covering the entire field of non-classical continuum mechanics and generalized mechanics, including the theory of elasticity, heat conduction, thermodynamic and electromagnetic continua, as well as applied mathematics. Every entry includes the historical background and the underlying theory, basic equations and typical applications. The reference list for each entry provides a link to the original articles and the most important in-depth theoretical works. Last but not least, ever y entry is followed by a cross-reference to other related subject entries in the dictionary.

A concise introductory course text on continuum mechanics Fundamentals of Continuum Mechanics focuses on the fundamentals of the subject and provides the background for formulation of numerical methods for large deformations and a wide range of material behaviours. It aims to provide the foundations for further study, not just of these subjects, but also the formulations for much more complex material behaviour and their implementation computationally. This book is divided into 5 parts, covering mathematical preliminaries, stress, motion and deformation, balance of mass, momentum and energy, and ideal constitutive relations and is a suitable textbook for introductory graduate courses for students in mechanical and civil engineering, as well as those studying material science, geology and geophysics and biomechanics. A concise introductory course text on continuum mechanics Covers the fundamentals of continuum mechanics Uses modern tensor notation Contains problems and accompanied by a companion website hosting solutions Suitable as a textbook for introductory graduate courses for students in mechanical and civil engineering

Tremendous advances in computer technologies and methods have precipitated a great demand for refinements in the constitutive models of plasticity. Such refinements include the development of a model that would account for material anisotropy and

produces results that compare well with experimental data. Key to developing such models-and to meeting

This textbook explores the theory of Cosserat continuum mechanics, and covers fundamental tools, general laws and major models, as well as applications to the mechanics of granular media. While classical continuum mechanics is based on the axiom that the stress tensor is symmetric, theories such as that expressed in the seminal work of the brothers Eugène and François Cosserat are characterized by a non-symmetric stress tensor. The use of von Mises motor mechanics is introduced, for the compact mathematical description of the mechanics and statics of Cosserat continua, as the Cosserat continuum is a manifold of oriented "rigid particles" with 3 dofs of displacement and 3 dofs of rotation, rather than a manifold of points with 3 dofs of displacement. Here, the analysis is restricted to infinitesimal particle displacements and rotations. This book is intended as a valuable supplement to standard Continuum Mechanics courses, and graduate students as

well as researchers in mechanics and applied mathematics will benefit from its self-contained text, which is enriched by numerous examples and exercises.

An adequate physical and mathematical description of material be havior is basic to all engineering applications. Fortunately, many prob lems may be treated entirely within the framework of elastic material response. While even these problems may become yuite complex be cause of geometrical and loading conditions, the linearity, reversibility, and rate independence generally applicable to elastic material descrip tion certainly eases the task of the analyst. Today, however, we are in creasingly confronted with practical problems which involve material response which is inelastic, hysteretic and rate dependent combined with loading which is transient in nature. These problems include, for instance, structural response to moving or impulsive loads, all the areas of ballistics (internal, external and terminal), contact stresses under high speed bearings, high speed machining, rolling and other metal working processes, explosive and impact forming, shock attenuation structures, seismic wave propagation, and many others of equal im portance. As these problems were encountered, it became increasingly evident that we did not have at hand the physical or mathematical description of the behavior of materials necessary to produce realistic solutions. Thus, during the last ten years particularly, there has been considerable effort expended toward the generation of both experi mental data on the dynamic mechanical response of materials as well as the formulation of realistic constitutive theories. It was the purpose of the Symposium at which the articles in this book were presented to discuss

and review recent developments in this field.
Treats subjects directly related to nonlinear materials modeling for graduate students and researchers in physics, materials science, chemistry and engineering.
An important collection of review papers by internationally recognized experts on the broad area of the mechanics of solids.
Schaum's Outline of Engineering Mechanics Dynamics, Seventh Edition
Continuum Mechanics and Plasticity
Research in Progress
With Applications to Granular Media
Mechanics of Solid Materials
Schaum's Outline of Continuum Mechanics
This second edition presents the theory of continuum mechanics using computational methods. The text covers a broad range of topics including general problems of large rotation and large deformations and the development and limitations of finite element formulations in solving such problems. Dr Shabana introduces theories on motion kinematics, strain, forces and stresses and goes on to discuss linear and nonlinear constitutive equations, including viscoelastic and plastic constitutive models. General nonlinear continuum mechanics theory is used to develop small and large finite element

formulations which correctly describe rigid body motion for use in engineering applications. This second edition features a new chapter that focuses on computational geometry and finite element analysis. This book is ideal for graduate and undergraduate students, professionals and researchers who are interested in continuum mechanics.

Ian Murdoch's Physical Foundations of Continuum Mechanics will interest engineers, mathematicians, and physicists who study the macroscopic behaviour of solids and fluids or engage in molecular dynamical simulations. In contrast to standard works on the subject, Murdoch's book examines physical assumptions implicit in continuum modelling from a molecular perspective. In so doing, physical interpretations of concepts and fields are clarified by emphasising both their microscopic origin and sensitivity to scales of length and time. Murdoch expertly applies this approach to theories of mixtures, generalised continua, fluid flow through porous media, and systems whose molecular

content changes with time. Elements of statistical mechanics are included, for comparison, and two extensive appendices address relevant mathematical concepts and results. This unique and thorough work is an authoritative reference for both students and experts in the field. Introductory Continuum Mechanics with Applications to Elasticity is a new kind of textbook: by combining continuum mechanics with elasticity theory and examples, it consolidates two textbooks into one. Not only does this save students on traditional book costs, but it also naturally blends these related topics into a cohesive book. With unique examples and problem sets, the title also serves as a solid introduction to continuum mechanics and elasticity. Developed from years of notes and classroom testing, the title is the perfect blend of content: multi-faceted and challenging, but without drowning the readers in complexity. Tariq Khraishi is an Associate Professor of Mechanical Engineering at the University of New Mexico. His research work is in the areas of

mechanics and materials science, as well as in the scholarship of teaching and learning. In particular, he has been involved in modeling, theoretical and experimental research in biomechanics, dislocation dynamics, eigenstrain theory and modeling, fracture mechanics, nanomaterials, composites, irradiation damage in materials, void growth and interaction in superplastic materials, heteroepitaxy and stresses in thin films, as well as active learning in engineering courses. He is a fellow of ASME and has published over 1OO refereed works, including another textbook on materials science/engineering. Yu-Lin Shen is currently a Professor of Mechanical Engineering at the University of New Mexico. He received his Ph.D. in engineering from Brown University in 1994, and was a post-doctoral research associate at the Massachusetts Institute of Technology before joining the faculty of the University of New Mexico in 1996. Professor Shen is widely recognized for his research in mechanical behavior of materials,

especially in modeling. His numerical modeling experience spans disparate length scales from the continuum level down to atomistics, focusing on mechanical issues related to thin films, composite materials and microelectronic devices, and packages. In 2OO5 Professor Shen was elected a fellow of the American Society of Mechanical Engineers (ASME). He is also the author of the book Constrained Deformation of Materials, published by Springer in 2O1O.

Conceived as a series of more or less autonomous essays, the present book critically exposes the initial developments of continuum thermo-mechanics in a post Newtonian period extending from the creative works of the Bernoullis to the First World war, i.e., roughly during first the "Age of reason" and next the "Birth of the modern world". The emphasis is rightly placed on the original contributions from the "Continental" scientists (the Bernoulli family, Euler, d'Alembert, Lagrange, Cauchy, Piola, Duhamel, Neumann, Clebsch, Kirchhoff, Helmholtz, Saint-Venant, Boussinesq, the Cosserat

brothers, Caratheodory) in competition with their British peers (Green, Kelvin, Stokes, Maxwell, Rayleigh, Love,..). It underlines the main breakthroughs as well as the secondary ones. It highlights the role of scientists who left essential prints in this history of scientific ideas. The book shows how the formidable developments that blossomed in the twentieth century (and perused in a previous book of the author in the same Springer Series: "Continuum Mechanics through the Twentieth Century", Springer 2013) found rich compost in the constructive foundational achievements of the eighteenth and nineteenth centuries. The pre-WWI situation is well summarized by a thorough analysis of treatises (Appell, Hellinger) published at that time. English translations by the author of most critical texts in French or German are given to the benefit of the readers.

Geometric Continuum Mechanics
Nonlinear Boundary Value Problems in Science and Engineering
Fundamentals of Continuum Mechanics

Advanced Mechanics of Solids
Applied Mechanics of Solids
Continuum Mechanics, Applied
Mathematics and Scientific Computing:
Godunov's Legacy

This volume collects papers dedicated to Jerry Ericksen on his sixtieth birthday, December 20, 1984. They first appeared in Volumes 82-90 (1983-1985) of the Archive for Rational Mechanics and Analysis. At the request of the Editors the list of authors to be invited was drawn up by C. M. Dafermos, D. D. Joseph, and F. M. Leslie. The breadth and depth of the works here reprinted reflect the corresponding qualities in Jerry Ericksen's research, teaching, scholarship, and inspiration. His interests and expertness center upon the mechanics of materials and extend to everything that may contribute to it: pure analysis, algebra, geometry, through all aspects of theoretical mechanics to fundamental experiment, all of these illumi nated by an intimate and deep familiarity with the sources, even very old ones. He is independent of school and contemptuous of party spirit; his generosity in giving away his ideas is

renowned, but not everyone is capable of accepting what is offered. His writings are totally free of broad claims and attributions beyond his own study. Some are decisive, some are prophetic, and all are forthright. His work has served as a beacon of insight and simple honesty in an age of ever more trivial and corrupt science. The authors of the memoirs in this volume are his students, colleagues, admirers, and (above all) his friends. Build on elementary mechanics of materials texts with this treatment of the analysis of stresses and strains in elastic bodies.

Advances in Applied Mechanics
Analytical and Numerical Solutions with MATLAB®
Non-Classical Continuum Mechanics