



## Continuum Mechanics: Advanced Topics and Research Trends

By Antonio Romano

Birkhauser. Paperback. Condition: New. 360 pages. This book offers a broad overview of the potential of continuum mechanics to describe a wide range of macroscopic phenomena in real-world problems. Building on the fundamentals presented in the authors previous book, Continuum Mechanics using Mathematica, this new work explores interesting models of continuum mechanics, with an emphasis on exploring the flexibility of their applications in a wide variety of fields. Specific topics, which have been chosen to show the power of continuum mechanics to characterize the experimental behavior of real phenomena, include: various aspects of nonlinear elasticity, including equilibrium equations and their variational formulation, nonlinear constitutive equations, existence and uniqueness theorems of Van Buren and Stoppelli, and Signorinis method with some extensions to live loads and acceleration waves continua with directors a model of a continuum with a nonmaterial moving interface mixture theory: The Gibbs Rule in a binary mixture interaction between electric or magnetic fields with matter micromagnetism continua in special relativity and relativistic interactions between matter and electromagnetic fields Appendices are included to provide background information on topics such as surface geometry, first-order PDEs, and weak solutions to models. Mathematica notebooks also accompanying the text are available for download at <http://...>



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