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Collana	Advances in Mechanics and Mathematics, , 1876-9896 ; ; 50
Disciplina	519.6 515.64 620.105
Soggetti	Mathematical optimization Calculus of variations Mathematical models Operator theory Mechanics, Applied Solids Differential equations Calculus of Variations and Optimization Mathematical Modeling and Industrial Mathematics Operator Theory Solid Mechanics Differential Equations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I An Abstract Well-posedness Concept -- Nonlinear Problems and Their Solvability -- Tykhonov Triples and Associate Well-posedness Concept -- Part II Relevant Examples of Well-posed Problems -- Fixed Point Problems -- Variational Inequalities -- Variational-hemivariational Inequalities -- Inclusions and Sweeping Processes -- Optimal Control and Optimization -- Part III Well-posed Contact Problems -- Preliminaries of Contact Mechanics -- Well-posed Static Contact Problems. Well-posed Quasistatic Contact Problems.

Sommario/riassunto

This monograph presents an original method to unify the mathematical theories of well-posed problems and contact mechanics. The author uses a new concept called the Tykhonov triple to develop a well-posedness theory in which every convergence result can be interpreted as a well-posedness result. This will be useful for studying a wide class of nonlinear problems, including fixed-point problems, inequality problems, and optimal control problems. Another unique feature of the manuscript is the unitary treatment of mathematical models of contact, for which new variational formulations and convergence results are presented. Well-Posed Nonlinear Problems will be a valuable resource for PhD students and researchers studying contact problems. It will also be accessible to interested researchers in related fields, such as physics, mechanics, engineering, and operations research.
