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Titolo	Mathematical Modelling in Solid Mechanics / / edited by Francesco dell'Isola, Mircea Sofonea, David Steigmann
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Descrizione fisica	1 online resource (XV, 316 p. 86 illus., 43 illus. in color.)
Collana	Advanced Structured Materials, , 1869-8441 ; ; 69
Disciplina	620.00151
Soggetti	Mechanics, Applied Solids Mathematics - Data processing Numerical analysis Mathematical physics Solid Mechanics Computational Science and Engineering Numerical Analysis Theoretical, Mathematical and Computational Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	1 Convergence of Hencky-type discrete beam model to Euler inextensible Elastica in large deformation: rigorous proof -- 2 Analysis of the deformation of Cosserat elastic shells using the dislocation density tensor -- 3 Flow relations and yield functions for dissipative strain-gradient plasticity -- 4 Finite elasto-plastic models for lattice defects in crystalline materials.
Sommario/riassunto	This book presents new research results in multidisciplinary fields of mathematical and numerical modelling in mechanics. The chapters treat the topics: mathematical modelling in solid, fluid and contact mechanics nonconvex variational analysis with emphasis to nonlinear solid and structural mechanics numerical modelling of problems with non-smooth constitutive laws, approximation of variational and hemivariational inequalities, numerical analysis of discrete schemes, numerical methods and the corresponding algorithms, applications to

mechanical engineering numerical aspects of non-smooth mechanics, with emphasis on developing accurate and reliable computational tools mechanics of fibre-reinforced materials behaviour of elasto-plastic materials accounting for the microstructural defects definition of structural defects based on the differential geometry concepts or on the atomistic basis interaction between phase transformation and dislocations at nano-scale energetic arguments bifurcation and post-buckling analysis of elasto-plastic structures engineering optimization and design, global optimization and related algorithms The book presents selected papers presented at ETAMM 2016. It includes new and original results written by internationally recognized specialists.