Record Nr. UNINA9910144378603321 Autore Neto E. A. de Souza (Eduardo) Titolo Computational methods for plasticity [[electronic resource]]: theory and applications / / Eduardo de Souza Neto, Djordje Peric, David Owens Chichester, West Sussex, UK, : Wiley, 2008 Pubbl/distr/stampa **ISBN** 1-119-96454-7 1-282-34858-2 9786612348587 0-470-69462-9 0-470-69463-7 Descrizione fisica 1 online resource (815 p.) Altri autori (Persone) PericDjordje OwensDavid <1948-> Disciplina 531.385 531/.385 Soggetti Plasticity - Mathematical models Mathematics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Computational Methods for Plasticity; CONTENTS; Preface; Part One Basic concepts; 1 Introduction; 2 Elements of tensor analysis; 3 Elements of continuum mechanics and thermodynamics; 4 The finite element method in quasi-static nonlinear solid mechanics: 5 Overview of the program structure; Part Two Small strains; 6 The mathematical theory of plasticity; 7 Finite elements in small-strain plasticity problems; 8 Computations with other basic plasticity models; 9 Plane stress plasticity; 10 Advanced plasticity models; 11 Viscoplasticity; 12 Damage mechanics; Part Three Large strains 13 Finite strain hyperelasticity14 Finite strain elastoplasticity; 15 Finite elements for large-strain incompressibility; 16 Anisotropic finite plasticity: Single crystals: Appendices: A Isotropic functions of a symmetric tensor; B The tensor exponential; C Linearisation of the virtual work; D Array notation for computations with tensors; References: Index

The subject of computational plasticity encapsulates the numerical

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methods used for the finite element simulation of the behaviour of a wide range of engineering materials considered to be plastic - i.e. those that undergo a permanent change of shape in response to an applied force. Computational Methods for Plasticity: Theory and Applications describes the theory of the associated numerical methods for the simulation of a wide range of plastic engineering materials; from the simplest infinitesimal plasticity theory to more complex damage mechanics and finite strain crystal plasticity m