

1. Record Nr.	UNINA9910452446603321
Titolo	Computational mechanics research trends [[electronic resource] /] / Hans P. Berger, editor
Pubbl/distr/stampa	Hauppauge, N.Y., : Nova Science Publishers, c2010
ISBN	1-61122-889-1
Descrizione fisica	1 online resource (608 p.)
Collana	Computer science, technology and applications
Altri autori (Persone)	BergerHans P
Disciplina	621.01/51
Soggetti	Materials - Mathematical models Materials - Computer simulation Mechanical engineering - Mathematics Mechanics, Analytic Electronic books.
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 MECHANICS""; ""COMPUTATIONAL MECHANICS""; ""CONTENTS ""; ""PREFACE ""; ""A NATURAL NEIGHBOUR METHOD BASEDON FRAEIJES DE VEUBEKE VARIATIONAL PRINCIPLE""; ""Abstract""; ""Introduction""; ""Virtual Work Principle""; ""Approximation of the Displacement Field""; ""Discretized Virtual Work Principle""; ""Linear Elastic Theory""; ""The Fraeijs de Veubeke Functional""; ""The Fraeijs de Veubeke Variational Principle""; ""Domain Decomposition and Discretization""; ""Equations Deduced from the Fraeijs de Veubeke Variational Principle""; ""Matrix Notation""; ""Numerical Integration"" ""Patch Tests""""Application to Pure Bending""; ""Application to a Square Membrane with a Circular Hole""; ""Extention to non Linear Materials""; ""Variational Equation""; ""Domain Decomposition and Discretization""; ""Matrix Notation""; ""Solution of the Matrix Equations""; ""Elasto-plastic Material with von Mises Linear Hardening""; ""Patch Tests""; ""Pure Bending of a Beam""; ""Square Membrane with a Circular Hole""; ""Extention to Linear Fracture Mechanics""; ""Introduction""; ""Domain Decomposition and Discretization""; ""Solution of the Equation System""; ""Patch Tests"" ""Translation Tests""""Mode 1 Tests""; ""Mode 2 Tests""; ""Bar with a

Single Edge Crack""; ""Conclusions""; ""Annex 1: Construction of the Voronoi Cells""; ""Case of a Convex Domain""; ""Case of a non Convex Domain""; ""Annex.2: Laplace Interpolant""; ""Case of a Point X Inside the Domain""; ""Case of a Point X on the Domain Contour""; ""Annex 3. Particular Case of a Regular Grid of Nodes""; ""Laplace Interpolant""; ""Case 1: X between A and B""; ""Case 2: X between B and C""; ""Case 3: X between C and D""; ""Annex 4. Introduction of the Hypotheses in the FdV Principle""
""Annex 5. Analytical Calculation of ΔV and $\Delta \Gamma$ """"References"";
""NUMERICAL AND THEORETICAL INVESTIGATIONS OF THE TENSILE FAILURE OF SHRUNK CEMENT-BASED COMPOSITES""; ""Abstract""; ""1. Introduction""; ""1.1. Characteristics of Shrunk Concrete""; ""1.2. Algorithm to Produce a Shrunk Specimen""; ""1.3. Lattice-Type Modeling of Concrete""; ""1.4. Paper Structure""; ""2. GB Lattice Model""; ""3. Method to Simulate Mismatch Deformation Due to Matrix Uniform Shrinkage""; ""4. Global Numerical Procedure""; ""4.1. Mohr-Coulomb Criterion""; ""4.2. Event-By-Event Algorithm""
""5. Theoretical Analyses of Influences of Pre-stressed Field""""6. Numerical Examples and Discussions""; ""6.1. Production of Shrunk Specimens""; ""6.2. Tensile Examples on Specimens without the Shrinkage-Induced Stress: Case 1 and Case 2""; ""6.3. Analysis of a Typical Case for Shrunk Specimens: Case 3""; ""6.4. Influence of the Shrinkage Rate: Case 3-5""; ""7. Conclusions""; ""Acknowledgments""; ""References""; ""RECENT ADVANCES IN THE STATIC ANALYSIS OF STIFFENED PLATES APPLICATION TO CONCRETE OR TO COMPOSITE STEEL-CONCRETE STRUCTURES""; ""Abstract""; ""Introduction""
""Statement of the Problem""
