Record Nr. UNINA9910779507703321 Computational mechanics research trends [[electronic resource] /] / **Titolo** 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 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 FRAEIJS 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

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""Statement of the Problem""