1.

Record Nr.	UNISALENTO991000420069707536
Autore	Prezzolini, Giuseppe
Titolo	L'arte di persuadere / Giuseppe Prezzolini ; introduzione di Alberto Asor Rosa
Pubbl/distr/stampa	Napoli : Liguori, 1991
Edizione	[2. ed.]
Descrizione fisica	113 p. ; 22 cm
Collana	Fuorimargine
Altri autori (Persone)	Asor Rosa, Alberto
Disciplina	168
Soggetti	Comunicazioni di massa
Lingua di pubblicazione	Italiano
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNINA9910808334803321

Titolo	Extended finite element method for crack propagation / / Sylvie Pommier ... [et al.]
Pubbl/distr/stampa	London, U.K., : ISTE Hoboken, N.J., : Wiley, 2011
ISBN	1-118-62265-0 1-299-31564-X 1-118-62184-0
Edizione	[1st ed.]
Descrizione fisica	1 online resource (280 p.)
Collana	ISTE
Altri autori (Persone)	PommierSylvie
Disciplina	620.1/1260151825
Soggetti	Fracture mechanics - Mathematics Finite element method
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Adapted and updated from La simulation numerique de la propagation des fissures : milieux tridimensionnels, fonctions de niveau, elements finis etendus et criteres energetiques published 2009 in France by Hermes Science/Lavoisier.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Title Page; Copyright Page; Table of Contents; Foreword; Acknowledgements; List of Symbols; Introduction; Chapter 1. Elementary Concepts of Fracture Mechanics; 1.1. Introduction; 1.2. Superposition principle; 1.3. Modes of crack straining; 1.4. Singular fields at cracking point; 1.4.1. Asymptotic solutions in Mode I; 1.4.2. Asymptotic solutions in Mode II; 1.4.3. Asymptotic solutions in Mode III; 1.4.4. Conclusions; 1.5. Crack propagation criteria; 1.5.1. Local criterion; 1.5.2. Energy criterion; 1.5.2.1. Energy release rate G 1.5.2.2. Relationship between G and stress intensity factors1.5.2.3. How the crack is propagated; 1.5.2.4. Propagation velocity; 1.5.2.5. Direction of crack propagation; Chapter 2. Representation of Fixed and Moving Discontinuities; 2.1. Geometric representation of a crack: a scale problem; 2.1.1. Link between the geometric representation of the crack and the crack model; 2.1.2. Link between the geometric representation of the crack and the numerical method used for crack growth simulation; 2.2. Crack representation by level sets; 2.2.1. Introduction; 2.2.2. Definition of level sets

2.2.3. Level sets discretization2.2.4. Initialization of level sets; 2.3. Simulation of the geometric propagation of a crack; 2.3.1. Some examples of strategies for crack propagation simulation; 2.3.2. Crack propagation modeled by level sets; 2.3.3. Numerical methods dedicated to level set propagation; 2.4. Prospects of the geometric representation of cracks; Chapter 3. Extended Finite Element Method X-FEM; 3.1. Introduction; 3.2. Going back to discretization methods; 3.2.1. Formulation of the problem and notations; 3.2.2. The Rayleigh-Ritz approximation; 3.2.3. Finite element method
3.2.4. Meshless methods.3.2.5. The partition of unity; 3.3. X-FEM discontinuity modeling; 3.3.1. Introduction, case of a cracked bar; 3.3.1.1. Case a: crack positioned on a node; 3.3.1.2. Case b: crack between two nodes; 3.3.2. Variants; 3.3.3. Extension to two-dimensional and three-dimensional cases; 3.3.4. Level sets within the framework of the eXtended finite element method; 3.4. Technical and mathematical aspects; 3.4.1. Integration; 3.4.2. Conditioning; 3.5. Evaluation of the stress intensity factors; 3.5.1. The Eshelby tensor and the J integral; 3.5.2. Interaction integrals
3.5.3. Considering volumic forces3.5.4. Considering thermal loading; Chapter 4. Non-linear Problems, Crack Growth by Fatigue; 4.1. Introduction; 4.2. Fatigue and non-linear fracture mechanics; 4.2.1. Mechanisms of crack growth by fatigue; 4.2.1.1. Crack growth mechanism at low KI; 4.2.1.2. Crack growth mechanisms at average or high KI; 4.2.1.3. Macroscopic crack growth rate and striation formation; 4.2.1.4. Fatigue crack growth rate of long cracks, Paris law; 4.2.1.5. Brief conclusions; 4.2.2. Confined plasticity and consequences for crack growth; 4.2.2.1. Irwin's plastic zones
4.2.2.2. Role of the T stress

Sommario/riassunto

Novel techniques for modeling 3D cracks and their evolution in solids are presented. Cracks are modeled in terms of signed distance functions (level sets). Stress, strain and displacement field are determined using the extended finite elements method (X-FEM). Non-linear constitutive behavior for the crack tip region are developed within this framework to account for non-linear effect in crack propagation. Applications for static or dynamics case are provided.