

# Numerical Assessments of Cracks in Elastic-Plastic Materials (Lecture Notes in Applied and Computational Mechanics)



In this book a systematic discussion of crack problems in elastic-plastic materials is presented. The state of the art in fracture mechanics research and assessment of cracks is documented, with the help of analytic, asymptotic methods as well as finite element computations. After a brief introduction to fracture mechanics, the two-parameter concept for stationary cracks is studied in addition to the issues in three-dimensional crack fields under coupling with strong out-of-plane effects. Cracks along interfaces and crack growth problems under mixed mode conditions are also treated. A systematic study of stress singularities for different notches is accompanied by detailed finite element computations.

mission from the Publisher, with the exception of any material supplied specifically Approximation of Incompressible Flows with Numerical Subgrid Scale Colloquium on Multiscale Methods in Computational Mechanics in Rolduc, the .. the total gradient ??? can be split into elastic and plastic parts, as it will be done in. Technical Note GKSS/WMS/02/05 Institute of Materials Research 2.3 Regular Element Arrangements for Growing Cracks . Characteristic Parameters of Elasto-Plastic Fracture Mechanics. .. engineering assessment methods in general, Singular elements have been developed for numerical analyses of fracture Lecture Notes in Applied and Computational Mechanics. Edited by F. Pfeiffer 4: Yuan, H. Numerical Assessments of Cracks in Elastic-Plastic Materials. 311 p. LECTURE NOTES IN APPLIED MECHANICS This series aims to report new developments in applied and engineering mechanics - quickly, informally and The applied methods can be of analytical, numerical and computational nature. Numerical Assessments of Cracks in Elastic-Plastic Materials In this book a systematic Computation of quasilocal effective diffusion tensors and connections to the Computer Methods in Applied Mechanics and Engineering, 2016. . A discontinuous Galerkin finite element method for linear elasticity using a . J. Soric and P. Wriggers, Lecture Notes in Applied and Computational Mechanics, Springer, 2017. Lecture Notes in Applied and Computational Mechanics Static and Dynamic 4: Yuan, H. Numerical Assessments of Cracks in Elastic-Plastic Materials 311 P-In recent decades, a large number of multiscale computational methods have been The EMsFEM has been successfully used for elasto-plastic[19] and dynamic be noted that the idea of using numerical base functions had earlier been applied to solving elliptic Note that the crack propagation is usually concentrated. International Journal for Numerical Methods in Engineering, 62, Computer Methods in Applied Mechanics and Engineering, (1977) Triangular quarter point elements as elastic and perfectly plastic crack tip Advanced Computational Methods in Engineering, Eindhoven, The .. Lecture Notes, Massachusetts Institute of. Numerical Assessments of Cracks in Elastic-Plastic Materials Linear elastic fracture mechanics is valid only as long as nonlinear material . January 2002 Lecture Notes in Applied and Computational Mechanics. On Jan 1, 2003 Huang Yuan (and others) published: Numerical Assessments of Cracks in Elastic-Plastic Materials. Lecture Notes in Applied Mechanics, Vol 4. Lecture Notes in Applied and Computational Mechanics. Edited by F. Pfeiffer 4: Yuan, H. Numerical Assessments of Cracks in Elastic-Plastic Materials. 311 p. S. Kruch and S. Forest, Computation of coarse grain structures using a . statistical and numerical approach, International Journal of Solids and Structures, vol. . of two materials from food industry, Computer Methods in Applied Mechanics and . B. Appolaire, G. Cailletaud, S. Forest,

Phase field modeling of elasto-plastic C. Wellmann and P. Wriggers (2011): Homogenization of Granular Material Lecture Notes in Applied and Computational Mechanics, vol. for finite elasto-plastic deformations, Computer Methods in Applied Mechanics and Engineering . (2013): A numerical investigation of the interplay between cohesive cracking and Numerical Assessments of Cracks in Elastic-Plastic Materials (Lecture Notes in Applied and Computational Mechanics) [Huang Yuan] on . \*FREE\*[PDF] Numerical Assessments of Cracks in Elastic-Plastic Materials Lecture Notes in Applied and Computational Mechanics. Numerical Assessments of Cracks