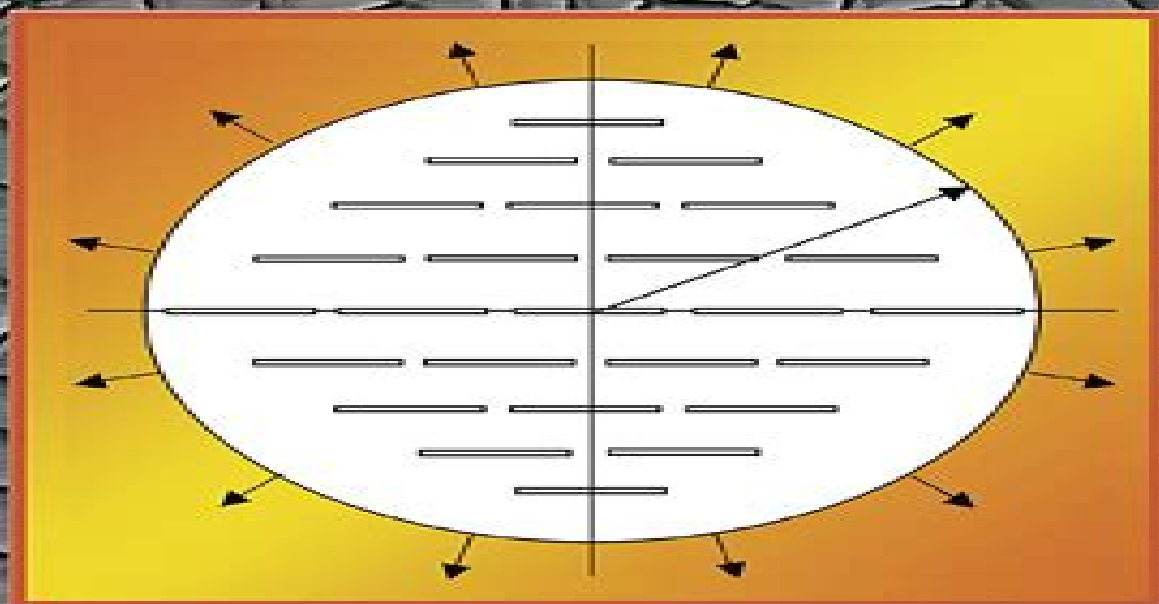


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Zihai Shi, 2009-06-17 This new book on the fracture mechanics of concrete focuses on the latest developments in computational theories and how to apply those theories to solve real engineering problems Zihai Shi uses his extensive research experience to present detailed examination of multiple crack analysis and mixed mode fracture Compared with other mature engineering disciplines fracture mechanics of concrete is still a developing field with extensive new research and development In recent years many different models and applications have been proposed for crack analysis the author assesses these in turn identifying their limitations and offering a detailed treatment of those which have been proved to be robust by comprehensive use After introducing stress singularity in numerical modelling and some basic modelling techniques the Extended Fictitious Crack Model EFCM for multiple crack analysis is explained with numerical application examples This theoretical model is then applied to study two important issues in fracture mechanics crack interaction and localization and fracture modes and maximum loads The EFCM is then reformulated to include the shear transfer mechanism on crack surfaces and the method is used to study experimental problems With a carefully balanced mixture of theory experiment and application Crack Analysis in Structural Concrete is an important contribution to this fast developing field of structural analysis in concrete Latest theoretical models analysed and tested Detailed assessment of multiple crack analysis and multi mode fractures Applications designed for solving real life engineering problems *Frattura ed Integrità*

*Strutturale: Annals 2012* Francesco Iacoviello, Luca Susmel, John Yates, 2012-10-03 *FAA/NASA International Symposium on Advanced Structural Integrity Methods for Airframe Durability and Damage Tolerance* Charles E. Harris, 1994 Applied Mechanics Reviews, 1979 **Innovative Numerical Approaches for Multi-Field and Multi-Scale Problems** Kerstin

Weinberg, Anna Pandolfi, 2016-06-24 This book provides readers with a detailed insight into diverse and exciting recent developments in computational solid mechanics documenting new perspectives and horizons The topics addressed cover a wide range of current research from computational materials modeling including crystal plasticity micro structured materials and biomaterials to multi scale simulations of multi physics phenomena Particular emphasis is placed on pioneering discretization methods for the solution of coupled non linear problems at different length scales The book written by leading experts reflects the remarkable advances that have been made in the field over the past decade and more largely due to the development of a sound mathematical background and efficient computational strategies The contents build upon the 2014 IUTAM symposium celebrating the 60th birthday of Professor Michael Ortiz to whom this book is dedicated His work has long been recognized as pioneering and is a continuing source of inspiration for many researchers It is hoped that by

providing a taste of the field of computational mechanics the book will promote its popularity among the mechanics and physics communities     **Advances in Applied Mathematics and Mechanics in China** Weichang Qian,Zizhi Fu,1990

**Crack Problems in the Classical Theory of Elasticity** Ian Naismith Sneddon,Morton Lowengrub,1969     The Multiple Crack Interaction Problem in Linear Elasticity [microform] Roger Chen,2002     **Symposium on Computational Modeling of Aircraft Structures** Haym Benaroya,Daniel S. Pipkins,1996     Nonlinear Fracture and Damage Mechanics M. H. Aliabadi,2001 Incorporating the latest research in this increasingly popular area this book presents theoretical and computational methods for problems in the field of nonlinear fracture and damage mechanics     **Mechanical and Material Engineering III** Zheng Yi Jiang,2015-07-27 Selected peer reviewed papers from the 2015 3rd International Forum on Mechanical and Material Engineering IFMME 2015 April 18 19 2015 Guangzhou China     3rd European Mechanics of Materials Conference on Mechanics and Multi-Physics Processes in Solids E. Busso,G. Cailletaud,1999     **Fiber Reinforced Cement Composites** Fadhel Aouadi,1992     *Computational Modeling of Viscoelastic Composite and Porous Materials* Yun Huang,2006     *Advances in Computational Engineering & Sciences 2000* Satya N. Atluri,F. Brust,2000     Mathematical Reviews ,2004     *Fracture of Solids with Microdefects* Vitaut Petrovich Tamuzh,2000 The book covers some problems of fracture of solids with linear or penny shaped cracks or rigid inclusions The analysis of the interaction of a macrocrack with small defects or microcracks in the frame of linear fracture mechanics is the main topic of the book The problem of the interaction of the macrocrack with microcracks has been intensively studied for almost two decades One of the pioneering papers was published in 1984 by the authors of the present book In the frame of linear elasticity a problem of interaction of the cracks holes or inclusions most often has been reduced to a system of singular integral equations Although exact solutions to the system of singular integral equations Although exact solutions to the system of singular integral equations exist in a few special cases the problem in general is solved by various asymptotic methods The series solution over a small parameter representing the ratio of the linear sizes of the microcrack to the macrocrack was first obtained by Tamuzs and Romalis in 1984 It was hown that the two dominant terms in the stress Intensity Factor SIF at the tip of the macrocrack do not depend on mutual interaction of the microcracks and only depend on the interaction of the macrocrack with arrays of small defects This method is applied to various macrocrack microdefect interaction problems of 2 D and 3 D elasticity and thermoelasticity A review of other approached to the problem is given at the end of the book     **How Gears Break** B. Aberšek,Jože Flašker,2004 This book presents an in depth study of the failure mechanisms of gears and describes how simulation models can be developed to complement or replace experimental tests     Physics Briefs ,1991

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