

<<土石坝水力劈裂>>

图书基本信息

书名：<<土石坝水力劈裂>>

13位ISBN编号：9787508441498

10位ISBN编号：7508441494

出版时间：2012-7

出版时间：水利水电出版社

作者：王俊杰

页数：182

字数：318000

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<土石坝水力劈裂>>

内容概要

水力劈裂是一种在岩石或土体中由于水位上升引起裂缝产生或扩展的物理现象。

土石坝水力劈裂是一个关系大坝安全的复杂问题。

王俊杰编著的《土石坝水力劈裂（英文版）》从水力劈裂的发生条件和机理、判定准则和数值模拟方法三方面研究土石坝水力劈裂问题，并研究了糯扎渡土石坝的抗水力劈裂性能。

《土石坝水力劈裂（英文版）》内容包括：文献综述，水力劈裂发生条件和机理，心墙土体的断裂韧度和抗拉强度、I-复合型断裂破坏判定准则，水力劈裂判定准则、数值模拟方法和影响因素。

本书读者包括水利工程的研究者、设计者和建设者，以及对水利工程研究感兴趣的人士。

<<土石坝水力劈裂>>

作者简介

王俊杰，男，1946年生，清华大学自动化系教授。

1970年毕业于清华大学动力系热工量测及自动化专业，后留校任教。

曾任清华大学自动化系自动检测及仪表教研组长、检测与电子技术研究所副所长、传感器与检测技术实验室主任。

1991-1992年在德国斯图加特大学热力学与热能工程研究所做高级访问学者。

学术兼职为中国仪器仪表学会理事、专家委员会委员，北京自动化学会监事长，中国电工学会计算机应用专业委员会理事，中国ASI总线协会理事等。

科研方面参加过国家“七五”、“八五”和“九五”科技攻关任务，国家高科技863工程和多项横向科研任务。

曾获得国家发明三等奖，北京市科技成果奖、科技进步奖和教委科技进步奖、863工程先进个人奖等多项奖励。

在国内外专业刊物发表论文60多篇，出版教科书和专著6部。

研究方向为基于模型的检测方法和智能仪表的研究，用于环保的大气和水质监测仪表的研究，现场总线技术及应用的研究等。

<<土石坝水力劈裂>>

书籍目录

ABSTRACT

ACKNOWLEDGEMENTS

NOMENCLATURE

Chapter 1 Introduction

- 1.1 Types of Embankment Dam
- 1.2 Hydraulic Fracturing
- 1.3 Failure of Teton Dam
- 1.4 Erosion Damage of Balderhead Dam
- 1.5 Leakage of Hyttejuvet Dam
- 1.6 Technical Route of Present Study

Chapter 2 Literature Review

- 2.1 Theories of Hydraulic Fracturing
 - 2.1.1 Theories Based on Circular Cavity Expansion Theory
 - 2.1.2 Theories Based on Spherical Cavity Expansion Theory
 - 2.1.3 Theories Based on True Triaxial Stress State Analysis
 - 2.1.4 Empirical Formulas
 - 2.1.5 Theories Based on Fracture Mechanics
- 2.2 Indoor Experimental Studies on Hydraulic Fracturing
- 2.3 Field Testing Studies on Hydraulic Fracturing
- 2.4 Model Testing Studies on Hydraulic Fracturing
- 2.5 Numerical Simulation on Hydraulic Fracturing
- 2.6 Summary

Chapter 3 Conditions and Mechanisms of Hydraulic Fracturing

- 3.1 Conditions of Hydraulic Fracturing
 - 3.1.1 Cracks Located at Upstream Face of Core
 - 3.1.2 Low Permeability of Core Soil
 - 3.1.3 Rapid Impounding
 - 3.1.4 Unsaturated Soil Core
- 3.2 Mechanical Mechanism of Hydraulic Fracturing
- 3.3 Summaries and Conclusions

Chapter 4 Fracture Toughness and Tensile Strength of Core Soil

- 4.1 Introduction
- 4.2 Tested Soil
- 4.3 Testing Technique on Fracture Toughness
 - 4.3.1 Testing Method
 - 4.3.2 Apparatus
 - 4.3.3 Testing Procedures
 - 4.3.4 Testing Program
- 4.4 Testing Results on Fracture Toughness
 - 4.4.1 Suitability of Linear Elastic Fracture Mechanics
 - 4.4.2 Influence Factors on Fracture Toughness
- 4.5 Testing Technique on Tensile Strength
 - 4.5.1 Testing Method and Apparatus
 - 4.5.2 Calculation on Tensile Strength
 - 4.5.3 Testing Procedures

<<土石坝水力劈裂>>

- 4.5.4 Testing Program
- 4.6 Testing Results on Teile Strength
 - 4.6.1 Water Content
 - 4.6.2 Dry Deity
 - 4.6.3 Precoolidation Pressure
- 4.7 Relatiohip Between Fracture Toughness and Teile Strength
- 4.8 Discussion
 - 4.8.1 Soils from References
 - 4.8.2 Rocks from References
- 4.9 Summaries and Conclusio
- Chapter 5 Fracture Failure Criterion for Core Soil Under Mixed Mode
 - 5.1 Introduction
 - 5.2 Experimental Technique
 - 5.2.1 Loading Assembly
 - 5.2.2 Calculation Theory
 - 5.2.3 Testing Procedures
 - 5.2.4 Test Program
 - 5.3 Testing Results
 - 5.4 Fracture Failure Criterion
 - 5.5 Summaries and Conclusio
- Chapter 6 Hydraulic Fracturing Criterion
 - 6.1 Introduction
 - 6.2 Failure Criterion
 - 6.2.1 Simplification of Crack
 - 6.2.2 Criterion
 - 6.3 Cubic Specimen with a Crack
 - 6.3.1 Calculation of KI
 - 6.3.2 Calculation of Kn
 - 6.3.3 Calculation of $(Kq-KZn)^{0.s}$
 - 6.3.4 Dangerous Crack Angle
 - 6.4 Core with a Travee Crack
 - 6.4.1 Calculation of KI
 - 6.4.2 Calculation of Ku
 - 6.4.3 Calculation of $(KZr +KZa)^{0s}$
 - 6.4.4 Dangerous Crack Angle
 - 6.5 Core with a Vertical Crack
 - 6.6 Strike-Dip of Crack Spreading Easiest
 - 6.7 Summaries and Conclusio
- Chapter 7 Numerical Method for Hydraulic Fracturing
 - 7.1 Introduction
 - 7.2 Theoretical Formula
 - 7.2.1 Failure Criterion of Hydraulic Fracturing
 - 7.2.2 Path of the Independent J Integral
 - 7.2.3 Virtual Crack Exteion Method
 - 7.2.4 Calculation of J Integral
 - 7.3 Numerical Techniques

<<土石坝水力劈裂>>

- 7.3.1 Virtual Crack Aa
- 7.3.2 Finite Element Model
- 7.3.3 Water Pressure Applied on Crack Face
- 7.3.4 Judgement and Simulation of Hydraulic Fracturing
- 7.4 Numerical Investigation
 - 7.4.1 Finite Element Model
 - 7.4.2 Virtual Crack Depth Aa
 - 7.4.3 Mechanical Paramete of Crack Material
- 7.5 Numerical Verification
 - 7.5.1 Mode Crack
 - 7.5.2 Mode J1 Crack and Mixed Mode Crack
- 7.6 Summaries and Conclusio
- Chapter 8 Facto Affecting Hydraulic Fracturing
 - 8.1 Introduction
 - 8.2 Facto Affecting Stress Arching Action
 - 8.2.1 Influence of Material Properties
 - 8.2.2 Influence of Dam Structure
 - 8.3 Relation Between Hydraulic Fracturing and Arching Action
 - 8.4 Facto Affecting Hydraulic Fracturing
 - 8.4.1 Analyzing Method
 - 8.4.2 Influence of Water Level
 - 8.4.3 Influence of Crack Depth
 - 8.4.4 Influence of Crack Position
 - 8.4.5 Influence of Core Soil Features
 - 8.5 Summaries and Conclusio
- Chapter 9 Simulation on Nuozhadu Dam
 - 9.1 Introduction to Nuozhadu Dam
 - 9.2 Behavior of Stress-Deformation of Nuozhadu Dam
 - 9.2.1 Finite Element Model
 - 9.2.2 Material Paramete
 - 9.2.3 Behavior of Stress-Deformation After Cotruction
 - 9.2.4 Behavior of Stress-Deformation After Filling
 - 9.3 Analyzing Method of Hydraulic Fracturing of Nuozhadu Dam
 - 9.3.1 Analyzing Method
 - 9.3.2 Material Paramete
 - 9.3.3 Finite Element Model
 - 9.3.4 Schemes Analyzed
 - 9.4 Hydraulic Fracturing in Horizontal Cracks
 - 9.5 Hydraulic Fracturing in Vertical Cracks
 - 9.6 Summaries and Conclusio
- References

<<土石坝水力劈裂>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>