



全国中文核心期刊

中国科协精品期刊

中国最具国际影响力学术期刊

中国百强报刊

湖北十大名刊

EI核心收录期刊



QK2257701

015

F5

# 岩石力学与工程学报

CHINESE JOURNAL OF  
ROCK MECHANICS AND ENGINEERING

第42卷 第4期 (总第407期)  
Vol.42 No.4(Total No.407)



4

2023

ISSN 1000-6915



中国岩石力学与工程学会 主办

科学出版社 出版



# 岩石力学与工程学报

2023年4月1日 第42卷 第4期(总第407期)

## 目 次

自然分形多孔储层复杂类型及其组构模式表征：理论与方法	金毅, 刘丹丹, 郑军领, 董佳斌, 王俏俏, 黄欢, 赵静妍, 刘顺喜, 宋慧波 (781)
无煤柱自成巷短臂梁顶板补偿支护力设计方法及其影响因素分析	杨军, 刘奔, 周鹏, 黄龙, 张俊, 侯世林, 王亚军, 陈菲 (798)
循环加载下节理砂岩宏细观损伤破坏机制研究	王瑞红, 危灿, 刘杰, 黎照, 谭亿虹 (810)
胶结充填体早期损伤对后期力学性能影响机制研究	甘德清, 张雅洁, 刘志义, 孙海宽 (821)
综放工作面区段煤柱采动应力全周期时空演化分析	庞义辉, 张国军, 王泓博, 柴海龙 (833)
层理角度对天然岩石材料动态断裂行为的影响研究	王雁冰, 付代睿 (849)
特高拱坝长期运行时变效应的状态空间诊断方法	陈波, 吴诚姝, 刘庭赫, 顾冲时 (868)
基于能量分析滑坡-隧道减震优化地震破坏特性试验研究	马至刚, 朱宝龙, 吴红刚, 牌立芳, 韦洪, 冯康, 孙浩, 周垣 (879)
基于相场方法的岩石弹塑性损伤模型研究及其数值实现	刘世藩, 王伟, 曹亚军, 朱其志, 邵建富 (896)
原位煤层抽采多重应力演化规律及对渗透率控制机制	刘辉辉, 于斌, 林柏泉, 夏彬伟, 李全贵, 邹全乐 (906)
盐穴储库水溶造腔夹层垮塌块体下落性态及应用	葛鑫博, 李银平, 李金龙, 施锡林, 马洪岭 (918)
异形载荷-弹性基础基本顶板结构破断特征及稳定性分析	吕凯, 何富连, 许旭辉, 翟文立, 秦宾宾 (930)
基于锚固剂环裂纹扩展的全长锚固脱黏失效机制研究	梁东旭, 张农, 荣浩宇 (948)
基于剪切和张拉试验的水泥砂浆-黏土岩二元体界面影响区模型	程树范, 曾亚武, 高睿, 张慧梅, 陈世官 (964)
平面S波在弹性介质与饱和冻土介质分界面上的能量传输特性	蒋汇鹏, 马强, 邵生俊, 邵帅 (976)
山岭隧道跨断裂带段及洞口段地震响应大型振动台模型试验研究	杨长卫, 张良, 张凯文, 岳茂, 童心豪, 温浩 (993)
甘肃省白龙江流域典型高位堆积层滑坡成因机制研究及其危险性预测	王高峰, 李浩, 田运涛, 陈宗良, 徐友宁, 高幼龙, 叶振南, 李瑞冬, 谢兴隆 (1003)
<b>土工基础</b>	
考虑开挖宽度的基坑卸荷引起下卧盾构隧道变形计算	魏纲, 郭丙来, 王哲, 刘嘉英 (1019)
底部刚性层限制条件下条形基础地基承载力系数 $N_c$ 与破坏模式	杨峰, 慈新航, 高益康, 赵炼恒 (1031)
<b>动态</b>	
新书《非饱和土与特殊土力学》内容及特色简介	(867)
下期内容预告	(1040)

责任编辑：刘素锦 排版：易开珍

期刊基本参数 CN 42 - 1397/O3\*1982\*m\*A4\*264\*zh\*P\* ¥60.00\*3100\*19\*2023 - 04

**Chinese Journal of Rock Mechanics and Engineering**  
**Vol. 42, No. 4 (Total No. 407) April 1, 2023**  
**CONTENTS**

Principle and approach for the characterization of complexity types and their assembly pattern in natural fractal porous reservoir ..... ..... JIN Yi, LIU Dandan,	ZHENG Junling, DONG Jiabin, WANG Qiaoqiao, HUANG Huan, ZHAO Jingyan, LIU Shunxi, SONG Huibo (781)
Design method of compensation support force of short arm beam roof in non-pillar mining with automatically formed roadway and its influencing factors analysis ..... ..... YANG Jun, LIU Ben, ZHOU Peng, HUANG Long, ZHANG Jun, HOU Shilin, WANG Yajun, CHEN Fei (798)	
Macro and micro characteristics of jointed sandstone under cyclicloading and unloading ..... ..... WANG Ruihong, WEI Can, LIU Jie, LI Zhao, TAN Yihong (810)	
Study on the mechanism of the influence of early damage of cemented backfill on later mechanical properties ..... ..... GAN Deqing, ZHANG Yajie, LIU Zhiyi, SUN Haikuan (821)	
Mining stress full-cycle temporal and spatial evolution analysis on section coal pillar of fully-mechanized caving face ..... ..... PANG Yihui, ZHANG Guojun, WANG Hongbo, CHAI Hailong (833)	
Effect of bedding angle on dynamic fracture behavior of natural rock materials ..... ..... WANG Yanbing, FU Dairui (849)	
State space diagnosis method for time-varying effect of extra-high arch dam in long-term operation ..... ..... CHEN Bo, WU Chengshu, LIU Tinghe, GU Chongshi (868)	
Experimental study on seismic failure characteristics optimization of landslide-tunnel shock absorption based on energy analysis ..... ..... MA Zhigang, ZHU Baolong, WU Honggang, PAI Lifang, WEI Hong, FENG Kang, SUN Hao, ZHOU Yuan (879)	
Study on the elastoplastic damage model for rock based on the phase-field method and its numerical implementation ..... ..... LIU Shifan, WANG Wei, CAO Yajun, ZHU Qizhi, SHAO Jianfu (896)	
Evolution of multiple stresses during in-situ coal seam extraction and its controlling mechanism on permeability ..... ..... LIU Huihui, YU Bin, LIN Baiquan, XIA Binwei, LI Quangui, ZOU Quanle (906)	
Falling behavior and application of interlayer-collapse-formed blocks during solution mining in salt cavern storages ..... ..... GE Xinbo, LI Yinpeng, LI Jinlong, SHI Xilin, MA Hongling (918)	
Fracture characteristics and stability analysis of main roof plate structure with special-shaped load and elastic foundation ..... ..... LV Kai, HE Fulian, XU Xuhui, ZHAI Wenli, QIN Binbin (930)	
Study on the failure mechanism of full-length anchorage de-bonding based on anchor agent ring crack propagation ..... ..... LIAO Dongxu, ZHANG Nong, RONG Haoyu (948)	
An interface influence zone(IIZ) model of cement mortar-clay rock binary based on shear and tension tests ..... ..... CHENG Shufan, ZENG Yawu, GAO Rui, ZHANG Huimei, CHEN Shiguan (964)	
Characteristic of energy transmission of plane-S-wave at interface between elastic medium and saturated frozen soil medium ..... ..... JIANG Huipeng, MA Qiang, SHAO Shengjun, SHAO Shuai (976)	
Large scale shaking table model test on seismic response of mountain tunnel portal section passing through fault zone ..... ..... YANG Changwei, ZHANG Liang, ZHANG Kaiwen, YUE Mao, TONG Xinhao, WEN Hao (993)	
Study on the formation mechanism and risk prediction of high-level accumulation landslides in Bailongjiang River Basin, Gansu Province ..... ..... WANG Gaofeng, ..... LI Hao, TIAN Yuntao, CHEN Zongliang, XU Youning, GAO Youlong, YE Zhennan, LI Ruidong, XIE Xinglong (1003)	
Deformation calculation of underlying shield tunnel caused by unloading of foundation pit considering excavation width ..... ..... WEI Gang, GUO Binglai, WANG Zhe, LIU Jiaying (1019)	
Bearing capacity coefficient $N_c$ and failure mode of strip foundation restricted by bottom rigid layer ..... ..... YANG Feng, CI Xinhong, GAO Yikang, ZHAO Lianheng (1031)	

Editor: LIU Sujin Typist: YI Kaizhen



ITASCA国际集团公司是全球岩土工程领域前沿技术研发厂家与产品供应商，旗下技术产品涵盖三维地质模型和数值分析模型网格剖分一体化解决方案、数值模拟程序包与微震/声发射监测与分析系统三大系列。



## 网格剖分 专业解决方案



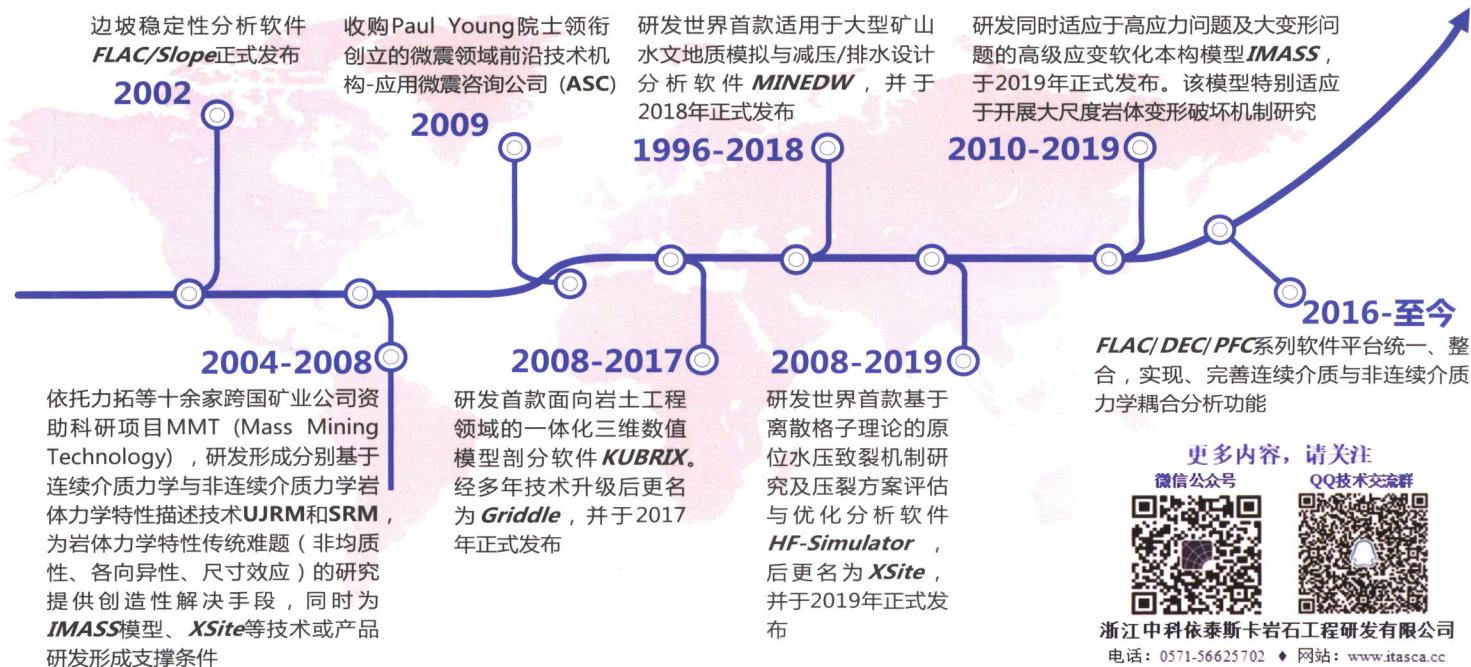
## 数值分析技术



## 微震声发射 监测与分析系统

- 世界首款依据岩土工程领域行业特点和要求定制研发形成的三维地质建模和数值分析模型网格剖分一体化解决方案
- 由 Rhinoceros 和 Griddle (通用网格处理器插件) 软件整合形成
- 连续介质力学软件 FLAC、非连续介质力学软件 DEC 和 PFC 三大系列通用岩土工程分析技术
- 水文地质评价与减压/排水设计 MINEDW、水压致裂机制研究和压裂方案设计 XSite 等满足特定需求的专业分析技术

## 本世纪ITASCA专有技术研发、升级大事记



更多内容，请关注

微信公众号

QQ 技术交流群



浙江中科依泰斯卡岩石工程研发有限公司  
电话：0571-56625702 ◆ 网站：[www.itasca.cc](http://www.itasca.cc)  
邮箱：[info@itasca.cc](mailto:info@itasca.cc)