



# 地质科技通报

Bulletin of Geological Science and Technology

原《地质科技情报》 中国地质大学(武汉)

## 3月 2022

第41卷 第2期  
Vol.41 No.2



中国地质大学  
CHINA UNIVERSITY OF GEOSCIENCES  
北京·WUHAN  
七十周年校庆  
THE 70TH ANNIVERSARY

CSCD 核心期刊

北大中文核心期刊

中国科技核心期刊

ISSN 2096-8523

CN 42-1904/P

CODEN: DKTICM

“地灾失稳机制及其风险评价”专辑



# 地质科技通报

原《地质科技情报》

2022年 第41卷 第2期(总第203期) 2022年3月出版 双月刊 国内外公开发行

## 目次

### “地灾失稳机制及其风险评价”专辑

- 水库滑坡涌浪风险研究现状和灾害链风险管控实践 ..... 殷坤龙,张宇,汪洋(1)
- 基于多传感器信息融合的城市边坡监测数据异常事件检测 ..... 刘刚,叶立新,陈麒玉,陈根深,范文遥(13)
- 泥质砂岩残积土边坡降雨冲刷特性 ..... 李继兴,严松,杨春健,方跃光(26)
- 香丽高速公路昌格洛滑坡—隧道工程病害三维数值分析 ..... 王剑非,刘昆珏,周文皎,张玉芳,王艳昆,范家玮(34)
- 考虑线状环境因子适宜性和不同机器学习模型的滑坡易发性预测建模规律  
..... 黄发明,李金凤,王俊宇,毛达雄,盛明强(44)
- 风振影响下乔木坡地暴雨型浅层滑坡演化机制 ..... 缪海波,王功辉(60)
- 考虑地震危险性的倾倒变形边坡风险定量分析 ..... 魏进兵,何治良,杨仲康(71)
- 基于机器学习的滑坡易发性预测建模及其主控因子识别  
..... 黄发明,胡松雁,闫学涯,李明,王俊宇,李文彬,郭子正,范文彦(79)
- 铜矿岭不稳定斜坡类型识别与工程地质分区 ..... 贾伟,罗昌宏,董钊,汪鸣飞,刘小红,包刘磊(91)
- 强震作用下斜坡表面放大效应的三维离散元模拟 ..... 蔡国军,陈锡锐,孙文鹏,贾俊(104)
- 物质点强度折减法边坡失稳判据选择方法 ..... 蒋先平,张鹏,卢艺伟,刘磊磊,张明辉(113)
- 深圳城市地面塌陷灾害特征及其成因分析 ..... 施秋华,魏会龙,谭飞,周金文,朱江皇(123)
- 基于SSA-Adam-BP神经网络模型的堰塞坝稳定性预测 ..... 宋宜祥,张晓波,黄达(130)
- 基于滑面分区段力学模型的高速滑坡运动过程能量转化研究 ..... 刘艺梁,陈健翔,高晨曦,宋琨,唐玄(139)
- 水泥固化剂提高风积沙承载性能试验 ..... 盛明强,邹淳,乾增珍,鲁先龙(147)
- 考虑土—结构相互作用下基岩深度对核反应堆厂房基础地震响应的影响 ..... 高运,徐若时,孙文静(154)
- 滑坡堰塞坝堆积形态影响因素离散元分析 ..... 刘士奇,王环玲,高闯,屈晓(165)
- 基于边界模型和广义耦合马尔可夫链模型的地层变异性模拟方法 ..... 潘敏,邓志平,蒋水华(176)
- InSAR技术和孕灾背景指标相结合的地灾隐患识别 ..... 董佳慧,牛瑞卿,亓梦茹,丁赞,徐航,何睿(187)
- 基于栅格最大值法的县域综合地质灾害建模 ..... 范雅婕,范宣梅,方成勇(197)
- 基于物理模型试验的杆塔基础滑坡防护措施效果研究 ..... 李思德,李远耀,殷坤龙,钟源,刘毅,许艺林(209)
- 基于修正Green-Ampt模型的降雨诱发区域浅层斜坡失稳灾害分析 ..... 阳帅,谭泽颖,陈宏信,张洁(219)
- 基于贝叶斯优化机器学习超参数的滑坡易发性评价 ..... 杨灿,刘磊磊,张遗立,朱文卿,张绍和(228)
- 基于MetaOD模型选择的岩土工程数据异常检测方法 ..... 邹彤彤,刘孝义,刘金泉,袁海梁,卢玉斌,张万虎(239)
- 基于双重注意力机制的滑坡识别方法优化 ..... 吴琪,周创兵,黄发明,姚池(246)
- 考虑软弱夹层控滑机制及其空间不确定性的顺层岩质滑坡易发性评价:万州区铁峰乡应用研究  
..... 冯霄,王禹,刘洋,刘庆丽,杜娟,柴波(254)
- 台风—非台风降雨型滑坡的多时段临界雨量值预测模型 ..... 栗倩倩,史绪山,柴波,王伟(267)
- 软硬互层顺层岩质边坡破坏试验 ..... 谭明健,周春梅,孙东,周紫朝(274)
- 锚杆不确定性对加固边坡失稳概率的影响 ..... 王上上,陈富,李东贤,林后来,刘志良,李亮(282)
- 基于信息量模型的地质灾害易发性评价:以川东南古蔺县为例 ..... 温鑫,范宣梅,陈兰,刘世康(290)
- 基于物理模型试验的多层滑带滑坡变形演化特征 ..... 杨登芳,胡新丽,徐楚,王强,牛李飞,张杰豪(300)
- 约束条件对滑坡涌浪特征影响的室内试验研究 ..... 张玉洁,许国庆,汪洋,杨超越,彭铿,王伟(309)
- 不同环剪条件下三峡库区童家坪滑坡滑带土强度特性 ..... 赵帆程,苗发盛,吴益平,薛阳,孟佳佳(315)
- 平面剪切岩质边坡滑裂面的确定及稳定性分析 ..... 周珂,黄小城,雷德阳,陈秋南,江飞飞(325)
- 冻土地基中锥管板条装配式基础抗拔承载性能试验研究 ..... 张学礼,崔强,张树林(335)

主 编:王 华 副 主 编:甘义群 李长冬 姜 涛 孙自永 刘江霞  
编辑部主任:刘江霞 责任编辑:禹华珍 英文审稿:严 瑾 特约副主编:黄发明  
期刊基本参数:CN42-1904/P\*1982\*b\*A4\*342\*zh\*P\*¥25.00\*1000\*35\*2022-03

# BULLETIN OF GEOLOGICAL SCIENCE AND TECHNOLOGY

(Bimonthly)

Vol. 42 No. 2 Mar. 2022

## CONTENTS

- A review of landslide-generated waves risk and practice of management of hazard chain risk from reservoir landslide ..... Yin Kunlong, Zhang Yu, Wang Yang (1)
- Abnormal event detection of city slope monitoring data based on multi-sensor information fusion ..... Liu Gang, Ye Lixin, Chen Qiyu, Chen Genshen, Fan Wenyaoyao (13)
- Rainfall erosion characteristics of argillaceous sandstone residual soil slopes ..... Li Jixing, Yan Song, Yang Chunjian, Fang Yueguang (26)
- Three-dimensional numerical analysis of the Chaggeluo landslide-tunnel engineering disaster on Shangri-La to Lijiang highway ..... Wang Jianfei, Liu Kunjue, Zhou Wenjiao, Zhang Yufang, Wang Yankun, Fan Jiawei (34)
- Modelling rules of landslide susceptibility prediction considering the suitability of linear environmental factors and different machine learning models ..... Huang Faming, Li Jinfeng, Wang Junyu, Mao Daxiong, Sheng Mingqiang (44)
- Evolution mechanism of rainstorm-induced shallow landslides on slopes covered by arbors considering the influence of wind-induced vibration ..... Miao Haibo, Wang Gonghui (60)
- Quantitative risk analysis of toppling slope considering seismic risk ..... Wei Jinbing, He Zhiliang, Yang Zhongkang (71)
- Landslide susceptibility prediction and identification of its main environmental factors based on machine learning models ..... Huang Faming, Hu Songyan, Yan Xueya, Li Ming, Wang Junyu, Li Wenbin, Guo Zizheng, Fan Wenyan (79)
- Type identification and engineering geology zoning of the unstable slope in Tongkuangling ..... Jia Wei, Luo Changhong, Dong Zhao, Wang Mingfei, Liu Xiaohong, Bao Liulei (91)
- Three-dimensional discrete element simulation of the amplification effect of the slope surface under the action of strong earthquakes ..... Cai Guojun, Chen Xirui, Sun Wenpeng, Jia Jun (104)
- Slope failure criterion for the strength reduction material point method ..... Jiang Xianping, Zhang Peng, Lu Yiwei, Liu Leilei, Zhang Minghui (113)
- Analyzing the characteristics and reason for the ground collapse hazard in Shenzhen ..... Shi Qihua, Wei Hailong, Tan Fei, Zhou Jinwen, Zhu Jianghuang (123)
- Stability prediction of landslide dams based on SSA-Adam-BP neural network model ..... Song Yixiang, Zhang Xiaobo, Huang Da (130)
- Energy conversion of the high-speed landslide movement process based on a sliding surface partition mechanical model ..... Liu Yiliang, Chen Jianxiang, Gao Chenxi, Song Kun, Tang Xuan (139)
- Experiments on the bearing capacity of aeolian sand stabilized by cement stabilizers ..... Sheng Mingqiang, Zou Chun, Qian Zengzhen, Lu Xianlong (147)
- Influence of bedrock depth on the seismic response of a nuclear reactor building foundation considering soil structure interaction ..... Gao Yun, Xu Ruoshi, Sun Wenjing (154)
- Discrete element analysis on influencing factors of deposit morphology of landslide dam ..... Liu Shiqi, Wang Huanling, Gao Chuang, Qu Xiao (165)
- Simulation method of stratigraphic uncertainty using a boundary model and generalized coupled Markov chain model ..... Pan Min, Deng Zhiping, Jiang Shuihua (176)
- Identification of geological hazards based on the combination of InSAR technology and disaster background indicators ..... Dong Jiahui, Niu Ruiqin, Qi Mengru, Ding Zan, Xu Hang, He Rui (187)
- County comprehensive geohazard modelling based on the grid maximum method ..... Fan Yajie, Fan Xuanmei, Fang Chengyong (197)
- Study on the effect of tower foundation landslide protection measures based on a physical model test ..... Li Side, Li Yuanyao, Yin Kunlong, Zhong Yuan, Liu Yi, Xu Yilin (209)
- Analysis of instability disaster of rainfall-induced shallow landslides at the regional scale based on the modified Green-Ampt model ..... Yang Shuai, Tan Zeying, Chen Hongxin, Zhang Jie (219)
- Machine learning based on landslide susceptibility assessment with Bayesian optimized hyperparameters ..... Yang Can, Liu Leilei, Zhang Yili, Zhu Wenqing, Zhang Shaohe (228)
- Outlier detection method for geotechnical engineering based on MetaOD model selection ..... Zou Tongtong, Liu Xiaoyi, Liu Jinquan, Yuan Hailiang, Lu Yubin, Zhang Wanhu (239)
- Optimization of the landslide identification method based on a dual attention mechanism ..... Wu Qi, Zhou Chuangbing, Huang Faming, Yao Chi (246)
- Susceptibility assessment of a translational rockslide considering the control mechanism and spatial uncertainty of a weak interlayer: Application study in Tiefeng Township, Wanzhou District ..... Feng Xiao, Wang Yu, Liu Yang, Liu Qingli, Du Juan, Chai Bo (254)
- Multiduration critical rainfall prediction model for typhoons and non-typhoon rainfall landslides ..... Li Qianqian, Shi Xushan, Chai Bo, Wang Wei (267)
- Failure Experiment of soft-hard interlayer bedding rock slope ..... Tan Mingjian, Zhou Chunmei, Sun Dong, Zhou Zichao (274)
- Influence of anchor uncertainty on the failure probability of reinforced slope ..... Wang Shangshang, Chen Fu, Li Dongxian, Lin Houlai, Liu Zhiliang, Li Liang (282)
- Susceptibility assessment of geological disasters based on an information value model: A case of Gulin County in Southeast Sichuan ..... Wen Xin, Fan Xuanmei, Chen Lan, Liu Shikang (290)
- Deformation and evolution characteristics of landslides with multiple sliding zones based on physical model test ..... Yang Dengfang, Hu Xinli, Xu Chu, Wang Qiang, Niu Lifei, Zhang Jiehao (300)
- Laboratory experiment on the influence of constraint conditions on landslide-generated waves ..... Zhang Yujie, Xu Guoqing, Wang Yang, Yang Chaoyue, Peng Keng, Wang Wei (309)
- Strength characteristics of slip zone soils of the Tongjiaping landslide in the Three Gorges Reservoir area under different ring shear conditions ..... Zhao Fancheng, Miao Fasheng, Wu Yiping, Xue Yang, Meng Jiajia (315)
- Determinations of the critical sliding surface of planar sliding rock slopes and their stability analysis ..... Zhou Ke, Huang Xiaocheng, Lei Deyang, Chen Qunan, Jiang Feifei (325)
- Experimental research on uplift bearing capacity of the assembled foundation with cone tube and slab in frozen subsoil ..... Zhang Xueli, Cui Qiang, Zhang Shulin (335)

2021 年“科技创新源泉工程”优秀科技期刊  
2020 年度中国高校优秀科技期刊  
2020 年获第十一届湖北省优秀期刊奖  
2018 年度中国高校优秀科技期刊  
2017 年获第十届湖北省优秀期刊奖  
2016 年度中国高校优秀科技期刊  
2015 年获第九届湖北省优秀期刊奖  
2014 年获第五届中国高校优秀科技期刊奖

地 质 科 技 通 报  
DIZHI KEJI TONGBAO  
(双月刊)1982 年创刊

第 41 卷 第 2 期 (总第 203 期) 2022 年 3 月

BULLETIN OF GEOLOGICAL  
SCIENCE AND TECHNOLOGY  
(Bimonthly)Established in 1982

Vol. 41 No. 2(Tot. No. 203) Mar. 2022

主管单位：中华人民共和国教育部  
主办单位：中国地质大学(武汉)  
主 编：王 华  
编辑出版：中国地质大学(武汉)《地质科技通报》编辑部  
地 址：湖北省武汉市洪山区鲁磨路 388 号  
电 话：+86-27-67885048  
传 真：+86-27-67884173  
电子信箱：kjqb@cug.edu.cn  
印 刷：武汉市籍缘印刷厂  
国内发行：湖北省邮政局  
邮发代号：38-130  
海外总发行：中国国际图书贸易集团有限公司  
国外发行代号：BM7999  
广告经营许可证：4201003002914

Edited by Editorial Department of  
*Bulletin of Geological Science and  
Technology of China University  
of Geosciences (Wuhan)*  
Chief Editor: Wang Hua  
Postal Address: 430074, Wuhan, Hubei, China  
Tel: +86-27-67885048  
Fax: +86-27-67884173  
E-mail: kjqb@cug.edu.cn  
Overseas Distributed by China National  
Publishing Industry Trading Corpo-  
ration(Address:P. O. Box 782, Beijing)

公开发行 刊号：ISSN 2096—8523 (国际标准刊号)  
CN 42—1904/P (国内统一刊号)

定价：25.00 元/本

ISSN 2096-8523

