

目 次

· 一、黄土高原重大工程灾变机理与防控 ·

- 考虑多种不确定性与阶段相关性的基坑开挖贝叶斯更新方法 许 领, 戚桢童, 赵腾远(361)
- 沉积深度对非饱和原状黄土压缩及湿陷特性的影响 许 领, 兰天刚, 陆世锋, 左 璐(375)
- 基于机器学习的黄土关键力学参数概率预测统一框架体系 宋 超, 赵腾远, 高重阳(386)
- 开挖工况下黄土-红黏土复合边坡土体蠕变特性及长期强度研究
..... 宋 欢, 王新刚, 滕宏泉, 叶旭光, 刘 凯, 石 卫, 杨金水(398)

· 二、秦岭北麓生态地质环境 ·

- 秦岭北麓小城镇群落与生态群落互馈的研究思考
..... 刘 冬, 崔轶杰, 彭建兵, 曹小曙, 申艳军, 邵 龙, 李登辉(407)
- 面向秦岭生态修复的可调型水凝胶材料构建: 重构性能与微观机理
..... 刘 瑾, 黄庭伟, 车文越, 吴 鹏, 彭建兵, 孙梦雅(419)
- 秦岭北麓(西安段)人类活动与生态环境互馈的海拔梯度特征
..... 王 瑞, 申艳军, 王 磊, 李少杰, 李 超, 穆青翼, 宁奕冰, 徐盼盼, 彭建兵(432)
- 秦岭北麓乡村人一地一业系统互馈模式与机理
..... 杨如玉, 黄晓燕, 秦 玥, 孙 腾, 吴楚晴, 朱 迪, 许 诺, 铤登祺, 王子奇, 吕 艳, 刘 冬, 申艳军, 曹小曙, 彭建兵(446)

· 矿物学·岩石学·矿床学 ·

- 挥发分对稀土成矿的意义——以山东微山和薛庄碱性岩体为例
..... 曾 曦, 范宏瑞, 邹心宇, 朱昱升, 黄永树, 兰 君, 李晓春(462)
- 南岭地区西山钙碱性火山岩中石榴子石的成因及其地质意义 丁丽雪, 付建明, 周 岱, 李 岩(477)
- 考虑细观形貌特征的岩石裂隙受压时变闭合规律 宋振宇, 颜炳明, 李 博, 邹良超, 石振明(496)
- 九嶷山复式岩体成因 张 博, 许金梅, 林寿洪, 李 斌, 张 乾, 刘湘华, 刘超云, 赖健清(513)
- 华北东部中生代高Mg[#]闪长岩与壳幔相互作用
..... 辛梦荷, 汪 浪, 刘传朋, 汪 翔, 郑怡欣, 宗克清, 郭京梁, 汪在聪(527)

· 地质灾害与工程地质 ·

- 考虑消落带参数退化与空间变异的边坡可靠度分析 邓志平, 万旻昊, 潘 敏, 蒋水华, 钟 敏, 罗 操(547)
- 物理引导的库岸谷幅变形智能预测模型 陈铭熙, 林朋辉, 蒋 舒, 姜清辉(560)
- 新近系黄土-红层滑坡典型控滑斜坡结构及其致灾机理: 综述与展望
..... 李 坤, 孙 萍, 王浩杰, 张 帅, 李 冉, 桑康云(578)
- 基于多源信息的岩溶区岩体完整与溶蚀程度规律及评估研究
..... 李 漪, 王友恒, 蔡玉娟, 蔡静森, 郝永浩, 晏鄂川(602)
- 基于GIS与RAMMS模拟的雪崩释放区识别及危险性评估: 以西藏扎墨公路嘎隆拉段为例
..... 田旭文, 姚 鑫, 周振凯, 陈晓强, 宋光耀, 朱 妹, 李显鑫(620)

· 地学大数据与地震地质 ·

- 多源融合的“岩石-矿物-光谱”知识图谱构建及应用 韩 伟, 张照坤, 雷辛亚, 王力哲(634)
- 地下爆炸Lg波地震矩与源地震矩关系数值模拟
..... 王旭亮, 靳 平, 王小明, 刘哲函, 唐 伟, 徐妍妍, 李俊杰(647)
- 融合多源特征的轻量化深度学习跨场景滑坡智能识别
..... 邢 珂, 窦 杰, 何雨健, 晏培修, 杨 涛, 李 喜, 董傲男(657)
- 数据-知识协同驱动的共生矿产知识图谱构建方法
..... 秦 颖, 杨 慧, 崔 柳, 鄢格斐, 王 佳, 乔亦娜, 吕青宙, 冯 健, 王文峰(674)
- 地震自动编目技术的进展与反思: 在智能处理时代 周一剑, 周仕勇(690)

· 其他 ·

- 南昌盆地大地热流特征及其对地热勘查靶区优选的启示
..... 邓建军, 白细民, 周 丽, 段文兵, 余浩文, 肖礼铄(703)
- 藏北白垩纪构造演化与铜金成矿作用 柏佳伟, 范建军, 侯鑫雨, 张博川, 孙思霖, 王 洋, 吕峻浦(722)
- 表面铁膜主导的丹霞红: 我国南方典型丹霞地层铁的赋存状态研究
..... 刘振康, 倪凤娟, 黎广荣, 郭福生, 王 超, 朱素雯, 秦 澳, 刘富军, 陈留勤(744)
- 岩石主微量元素的便携式X射线荧光光谱仪分析校准及应用 赵 森, 王鑫玉, 孙明道(756)
- 亚洲地区晚侏罗至早白垩世陆地脊椎动物生态功能多样性演化
..... 喻宇宸, 黄元耕, 冯学谦, 王向东, 赵 赫, 郭 镇, 李子珩, 黄鑫月, 曹田靖, 辛佰仑, 陈中强(767)
- 《地球科学》2026年3月第51卷第3期要目预告 (755)

EARTH SCIENCE**Vol.51 No.2 Feb. 2026****CONTENTS**

- **1. Mechanism and Prevention of Major Engineering Disasters on the Loess Plateau** •
 - Bayesian Updating Method of Excavation Considering Various Uncertainties and Stage Correlation *Xu Ling, Qi Yatong, Zhao Tengyuan* (361)
 - Effect of Sediment Depth on the Compression Behavior and Collapse Behavior of Intact Loess *Xu Ling, Lan Tiangang, Lu Shifeng, Zuo Lu* (375)
 - Unified Framework for Probabilistic Prediction of Critical Mechanical Parameters of Loess by Machine Learning Methods *Song Chao, Zhao Tengyuan, Gao Chongyang* (386)
 - Study on Creep Characteristics and Long-Term Strength of Soil in Loess-Red Clay Composite Slopes Under Excavation Conditions *Song Huan, Wang Xingang, Teng Hongquan, Ye Xuguang, Liu Kai, Shi Wei, Yang Jinshui* (398)
- **2. Eco-Geological Environment of the Northern Foot of Qinling Mountains** •
 - Study on Mutual Feedback between Small Town Communities and Ecological Communities in the Northern Foothills of Qinling Mountains *Liu Dong, Cui Yijie, Peng Jianbing, Cao Xiaoshu, Shen Yanjun, Shao Long, Li Denghui* (407)
 - Development of an Adjustable Hydrogel Material for Ecological Restoration in the Qinling Mountains: Reconstructed Performance and Microscopic Mechanism *Liu Jin, Huang Tingwei, Che Wenyue, Wu Peng, Peng Jianbing, Sun Mengya* (419)
 - Elevation Gradient Characteristics of the Interfeeding between Human Activities and Ecological Environment in Xi'an Section of the Northern Foot of Qinling Mountains *Wang Rui, Shen Yanjun, Wang Lei, Li Chao, Li Shaojie, Mu Qingyi, Ning Yibing, Xu Panpan, Peng Jianbing* (432)
 - Patterns and Mechanisms of Human-Land-Industry System Mutual Feedback in Villages of the Northern Foothills of Qinling Mountains *Yang Ruyu, Huang Xiaoyan, Qin Yue, Sun Teng, Wu Chuqing, Zhu Di, Xu Nuo, Xuan Dengqi, Wang Ziqi, Lv Yan, Liu Dong, Shen Yanjun, Cao Xiaoshu, Peng Jianbing* (446)
- **Mineralogy • Petrology • Mineral Deposits** •
 - Significance of Volatiles for Rare-Earth Mineralization: Insights from the Weishan and Xuezhuang Alkaline(-Carbonatite) Complexes, Shandong Province *Zeng Xi, Fan Hongrui, Zou Xinyu, Zhu Yusheng, Huang Yongshu, Lan Jun, Li Xiaochun* (462)
 - Genesis of Garnet in Calc-Alkaline Volcanic Rocks from Xishan Complex in Nanling Region, and Its Geological Significance *Ding Lixue, Fu Jianming, Zhou Dai, Li Yan* (477)
 - Study on Time-Dependent Closure Behavior of Rock Fractures Subject to Normal Stress *Song Zhenyu, Yan Bingming, Li Bo, Zou Liangchao, Shi Zhenming* (496)
 - Petrogenesis of the Jiushishan Composite Pluton in South China *Zhang Bo, Xu Jinmei, Lin Shouhong, Li Bin, Zhang Qian, Liu Xianghua, Liu Chaoyun, Lai Jiangqing* (513)
 - North China Eastern Mesozoic High Mg²⁺ Diorites and Crust-Mantle Interaction *Xin Menghe, Wang Lang, Liu Chuanpeng, Wang Xiang, Zheng Yixin, Zong Keqing, Guo Jingliang, Wang Zaicong* (527)
- **Engineering Geology and Disaster Geology** •
 - Slope Reliability Analysis Considering Degradation and Spatial Variability of Subsidence Zone Parameters *Deng Zhiping, Wan Minhao, Pan Min, Jiang Shuihua, Zhong Min, Luo Cao* (547)
 - Research on Physics-Guided Intelligent Prediction Model for Valley Contraction Deformation of Reservoir Bank Slopes *Chen Mingxi, Lin Penghui, Jiang Shu, Jiang Qinghui* (560)
 - Typical Slope Structures and Their Sliding Control Mechanisms of Neogene Loess-Red Bed Landslides: A Review and Prospects *Li Kun, Sun Ping, Wang Haojie, Zhang Shuai, Li Ran, Sang Kangyun* (578)
 - Patterns and Evaluation of Rock Mass Integrity and Dissolution Degree in Karst Area Based on Multi-Source Data *Li Yi, Wang Youheng, Cai Yujuan, Cai Jingsen, Hao Yonghao, Yan Echuan* (602)
 - Snow Avalanche Release Area Identification and Hazard Assessment Based on GIS and RAMMS Modeling: A Case Study of the Galongla Section of the Zhamo Highway, Xizang *Tian Xuwen, Yao Xin, Zhou Zhenkai, Chen Xiaoqiang, Song Guangyao, Zhu Shu, Li Xianxin* (620)
- **Geology Bigdata and Earthquake Geology** •
 - Construction and Application of the "Rock-Mineral-Spectrum" Knowledge Graph Based on Multi-Source Fusion *Han Wei, Zhang Zhaokun, Lei Xinya, Wang Lizhe* (634)
 - Numerical Simulation on the Relationship between Seismic Moment of Lg Wave and Source of Underground Explosion *Wang Xuliang, Jin Ping, Wang Xiaoming, Liu Zhehan, Tang Wei, Xu Yanan, Li Junjie* (647)
 - Lightweight Deep Learning for Cross-Scene Landslide Intelligent Recognition with Multi-Source Feature Fusion *Xing Ke, Dou Jie, He Yujian, Yan Peixiu, Yang Tao, Li Xi, Dong Anan* (657)
 - Developing a Data-Knowledge Synergy-Driven Methodology for Co-Associated Minerals Knowledge Graph Construction *Qin Ying, Yang Hui, Cui Liu, Feng Gefei, Wang Jia, Qiao Yina, Lv Qingzhou, Feng Jian, Wang Wenfeng* (674)
 - Rethinking the Advances and Challenges of Contemporary Auto-Cataloging Workflows: In the AI Processing Era *Zhou Yijian, Zhou Shiyong* (690)
- **Others** •
 - Characteristics of Heat Flow in Nanchang Basin and Its Revelation to the Selection of Geothermal Exploration Target Areas *Deng Jianjun, Bai Ximin, Zhou Li, Duan Wenbing, Yu Haowen, Xiao Lishuo* (703)
 - Cretaceous Tectonic Evolution and Cu-Au Metallogenesis in Northern Tibet *Bai Jiawei, Fan Jianjun, Hou Xinyu, Zhang Bochuan, Sun Silin, Wang Yang, Lv Junpu* (722)
 - Danxia Red Caused by Surface Iron Coating: Study on the Occurrence State of Iron in Typical Danxia Strata in Southern China *Liu Zhenkang, Ni Fengjuan, Li Guangrong, Guo Fusheng, Wang Chao, Zhu Suwen, Qin Ao, Liu Fujun, Chen Liujin* (744)
 - Calibration and Application of Portable X-Ray Fluorescence Spectrometer for Major and Trace Element Analysis of Rocks *Zhao Shen, Wang Xingyu, Sun Mingdao* (756)
 - Evolution of Functional Diversity in Terrestrial Vertebrates from the Late Jurassic to Early Cretaceous in Asia *Yu Yuchen, Huang Yuangeng, Feng Xueqian, Wang Xiangdong, Zhao He, Guo Zhen, Li Ziheng, Huang Xinyue, Cao Tianjin, Xin Bailun, Chen Zhong-qiang* (767)