

ISSN 1000 - 4548  
CODEN YGXUEB

# 岩土工程学报

Chinese Journal of Geotechnical Engineering

第44卷      增刊2 (总387期)  
Vol.44      Supp.2 (Total 387)

## 增刊 2

## 2022

### 主 办

中国水利学会      中国土木工程学会  
中国力学学会      中国建筑学会  
中国水力发电工程学会      中国振动工程学会

ISSN 1000-4548



9 771000 454223

目 次

基于振动台试验的粉质黏土隧道抗震计算方法修正 ..... 马险峰, 刘正好, 吴迪, 董一今 (1)

CFG 桩单桩承载力离心模型试验与现场试验对比分析 ..... 王年香, 刘超, 林显才, 曹昌浩, 连长秋 (6)

ZJU-400 离心机机载微型 CPTu 装置研制与性能测试 ..... 周燕国, 王智男, 马强, 梁甜, 陈云敏 (11)

砂土中大直径单桩风机动力响应模型试验 ..... 张陈蓉, 田抒平, 张纪蒙 (16)

基于透明土的填土密度对土拱效应影响模型试验研究 ..... 叶观宝, 李凌旭, 张振, 陶凤娟, 程冰男 (20)

超重力试验孔压增量模型与适用性研究 ..... 汤兆光, 王永志, 王孟伟, 孙锐, 刘远鹏, 杨阳 (25)

震后地下结构在火灾下的力学性能初步分析 ..... 王国波, 刘强, 王鸿杰, 王建宁, 董正方 (30)

特高心墙坝地震反应离心模型试验研究 ..... 湛正刚, 韩朝军, 顾行文, 任国峰, 王年香 (36)

特高心墙坝岸坡接触黏土层变形特性离心模型试验研究 ..... 程瑞林, 慕洪友, 顾行文, 任国峰, 王年香 (40)

基于离心机振动台试验的地震液化中砂土微观结构的演化机理分析 ..... 谢小丽, 王子凡, 叶斌 (45)

桩承式路堤桩土荷载分担特性物理模型试验研究 ..... 吕玺琳, 庞博, 朱长根, 张甲峰, 徐柯锋, 马泉 (50)

隧道开挖引起上部建筑物沉降的离心模型试验研究 ..... 张宇亭, 安晓宇, 晋亚斐 (54)

基础刚度对加筋边坡稳定性影响的离心试验研究 ..... 陈凌伟, 李波, 李从安, 刘伟, 彭卫平 (58)

高速土工离心机转臂设计与研究 ..... 许元恒, 冉光斌, 陈红永 (62)

离心模型试验中土的渗透相似性研究 ..... 王年香, 任国峰, 顾行文 (66)

重载堆场桩网复合地基离心模型试验与数值模拟研究 ..... 李威, 周春儿, 吴加武, 董华钢, 任红磊 (71)

离心机非连续转机对阻隔墙内污染物运移影响的数值模拟研究 ..... 曹林峰, 李育超, 黄博 (76)

土工模型箱超重力场夹层空间温度传递特性研究 ..... 陈红永, 张晨, 黎启胜, 王东, 沈展鹏, 方叶, 何琴淑 (83)

超大荷载下 CFG 桩网复合地基离心模型试验研究 ..... 王年香, 周春儿, 董华钢, 李珍, 何元塘 (87)

间隔型基坑开挖效应的离心机模拟试验研究 ..... 马险峰, 林想, 王欣杰, 黄继成 (92)

装配式驳岸结构水平承载特性离心模型试验研究 ..... 顾宽海, 陆敏, 彭玮, 任国峰, 顾行文 (97)

隧道无支撑长度对开挖面稳定性影响的离心模型试验 ..... 牛豪爽, 翁效林, 胡继波, 侯乐乐 (101)

推移区树根桩网复合地基加固效果离心模型试验验证 ..... 王年香, 周春儿, 吴加武, 江文铂, 张德恩 (107)

盾构隧道纵缝接头变形可恢复性足尺试验研究 ..... 张艳杰, 黄宏伟, 周鸣亮 (112)

机械法联络通道 T 接部位受力特性及弱化分析 ..... 张付林, 刘正好, 朱瑶宏, 董子博 (116)

基于三维随机场的地表堆载引发运营隧道变形分析 ..... 田宁, 陈健, 田铠玮, 周宁希, 黄珏皓 (120)

大断面浅覆土矩形顶管模型试验研究 ..... 潘羽擎, 甄亮, 蒋海里, 李晓军 (125)

浅覆土大断面矩形顶管施工管节内力演化规律研究 ..... 朱卫杰, 甄亮, 徐文蕴, 李晓军 (130)

MICP 技术用于地质碳封存的微观机理研究初探 ..... 王誉泽, 鲁鋈 (134)

饱和粉土相变能源桩热响应模型试验及验证 ..... 汤焯, 郑明飞, 史世雍 (139)

北疆干旱区平原水库大坝渗流稳定分析研究 ..... 阿布都沙拉木·托尔逊, 再娜甫·依米提, 马立平 (143)

变围压循环荷载作用下超固结软黏土阻尼比试验研究 ..... 黄珏皓, 陈健, 余颂, 阎晓玲, 赵永峰, 付晓东, 马超 (147)

低碳固化剂修复重金属污染黏土的水动力参数测评 ..... 冯亚松, 周实际, 万佳磊, 王水, 杜延军 (151)

深层粉质黏土旁压试验及参数反分析 ..... 杨玉生, 刘小生, 彭文明, 赵剑明, 朱凯斌, 朱斌 (155)

基岩裸露率与土壤厚度对土壤流失影响的模拟试验 ..... 邓大鹏, 刘琦, 卢耀如, 任标 (160)

基于 PDV 模型对一维“锅盖效应”气态水迁移的研究 ..... 唐国航, 王乃东, 姚仰平 (164)

温度静力触探的室内模型试验研究 ..... 莫品强, 胡静, 胡裕琛, 马丹阳, 任志文 (169)

人工冻土水热侵蚀问题室内试验研究 ..... 吴元昊, 孙旻, 洪泽群 (173)

一种用于 PFC 的砂土剪切带宽度自动识别方法 ..... 陈曦, 刘宗祺, 崔柳生, 唐建彬 (179)

基于原位监测和模型试验的膨胀土高边坡稳定性分析 ..... 任佳丽, 熊勇, 程永辉, 胡胜刚, 胡波 (183)

考虑接触损伤效应的衬砌渠道冻胀过程数值模拟方法 ..... 张晨, 王羿, 韩孝峰, 金龙 (188)

CFG 桩和树根桩单桩承载力现场试验研究 ..... 王年香, 周春儿, 吴加武, 任国峰 (194)

考虑垫层影响的树根桩单桩承载力试验研究 ..... 任国峰, 刘超, 林显才, 曹昌浩, 连长秋 (198)

考虑冻胀及水力断面双优梯形最佳断面 ..... 徐虎城, 刘雨昕, 王羿, 韩孝峰, 迪娜·吐尔孙阿力 (203)

非饱和膨胀土-桩界面大型剪切试验与本构模拟 ..... 张致远, 钱建固, 王成 (207)

基于离心试验和数值模拟的加翼单桩水平承载性能研究 ..... 李波, 李炜 (211)

加筋土桥台抗震性能影响因素试验研究 ..... 罗敏敏, 徐超, 陈赞, 杨阳, 梁程 (215)

考虑桩土相对刚度影响的桩基水平循环累积变形特性及预测方法研究 ..... 王洋, 竺明星, 戴国亮, 龚维明, 林靖阳 (220)

渠道混凝土衬砌机械化置缝施工技术及应用 ..... 朱国建 (226)

## CONTENTS

Correction of seismic calculation method for silty clay tunnels based on shaking table test .....	MA Xian-feng, LIU Zheng-hao, WU Di, DONG Yi-jin (1)
Comparative analysis of bearing capacity of CFG single pile by centrifugal model tests and field tests .....	WANG Nian-xiang, LIU Chao, LIN Xian-cai, CAO Chang-hao, LIAN Chang-qiu (6)
Development and performance testing of in-flight miniature CPTu equipment on ZJU-400 centrifuge .....	ZHOU Yan-guo, WANG Zhi-nan, MA Qiang, LIANG Tian, CHEN Yun-min (11)
Model tests on large-diameter monopile-supported offshore wind turbine in sand .....	ZHANG Chen-rong, TIAN Shu-ping, ZHANG Ji-meng (16)
Model tests on influences of fill density on soil arching effects using transparent soil .....	YE Guan-bao, LI Ling-xu, ZHANG Zhen, TAO Feng-juan, CHENG Bin-nan (20)
Incremental model for pore water pressure and its applicability in centrifuge modelling .....	TANG Zhao-guang, WANG Yong-zhi, WANG Meng-wei, SUN Rui, LIU Yuan-peng, YANG yang (25)
Preliminary analysis of mechanical properties of subway station under fire after earthquake .....	WANG Guo-bo, LIU Qiang, WANG Hong-jie, WANG Jian-ning, DONG Zheng-fang (30)
Dynamic centrifuge modelling tests on seismic response of super-high core dams .....	ZHAN Zheng-gang, HAN Chao-jun, GU Xing-wen, REN Guo-feng, WANG Nian-xiang (36)
Centrifugal model tests on deformation behavior of contact clay of ultra-high core dams .....	CHENG Rui-ling, MU Hong-you, GU Xing-wen, REN Guo-feng, WANG Nian-xiang (40)
Centrifuge shaking table tests on evolution mechanism of sand mesostructure during earthquake liquefaction .....	XIE Xiao-li, WANG Zi-fan, YE Bin (45)
Physical model tests on load-sharing characteristics of piles and soils in pile-supported embankment .....	LÜ Xi-lin, PANG Bo, ZHU Chang-gen, ZHANG Jia-feng, XU Ke-feng, MA Quan (50)
Centrifugal model tests on settlement of structures caused by tunnel excavation .....	ZHANG Yu-ting, AN Xiao-yu, JIN Ya-fei (54)
Centrifugal model tests on influences of foundation stiffness on stability of reinforced slopes .....	CHEN Ling-wei, LI Bo, LI Cong-an, LIU Wei, PENG Wei-ping (58)
Study and design of rotary arm of geotechnical centrifuge with high speed .....	XU Yuan-heng, RAN Guang-bin, CHEN Hong-yong (62)
Permeability similarity of soils in centrifugal model tests .....	WANG Nian-xiang, REN Guo-feng, GU Xing-wen (66)
Centrifugal model tests and numerical simulations of pile-net composite foundation for heavy-load storage yard .....	LI Wei, ZHOU Chun-er, WU Jia-wu, DONG Hua-gang, REN Hong-lei (71)
Numerical modeling of influences of discontinuous centrifugation on contaminant migration in cutoff wall .....	CAO Lin-feng, LI Yu-chao, HUANG Bo (76)
Temperature transfer characteristics of clearance space in hypergravity field of geotechnical model box .....	CHEN Hong-yong, ZHANG Chen, LI Qi-sheng, WANG Dong, SHEN Zhan-peng, FANG Ye, HE Qin-shu (83)
Centrifugal model tests on CFG pile-net composite foundation under super-large loads .....	WANG Nian-xiang, ZHOU Chun-er, DONG Hua-gang, LI Zhen, HE Yuan-tang (87)
Centrifugal model tests on excavation effect of interval foundation pits .....	MA Xian-feng, LIN Xiang, WANG Xin-jie, HUANG Ji-cheng (92)
Centrifugal model tests on characteristics of horizontal loads of assembly revetment structure .....	GU Kuan-hai, LU Min, PENG Wei, REN Guo-feng, GU Xing-wen (97)
Centrifugal model tests on influences of unsupported length of tunnels on stability of excavation face .....	NIU Hao-shuang, WENG Xiao-lin, HU Ji-bo, HOU Le-le (101)
Centrifugal model tests on reinforcement effects of root pile-net composite foundation in slip zone .....	WANG Nian-xiang, ZHOU Chun-er, WU Jia-wu, JIANG Wen-bo, ZHANG De-en (107)
Full-scale tests on deformation recoverability of longitudinal joints of shield tunnel .....	

.....	ZHANG Yan-jie, HUANG Hong-wei, ZHOU Ming-liang (112)
Stress characteristics and weakening analysis of T-joint of connection passage by mechanical excavation method .....	
.....	ZHANG Fu-lin, LIU Zheng-hao, ZHU Yao-hong, DONG Zi-bo (116)
Deformation of tunnels in service induced by ground surface surcharge based on 3D random field .....	
.....	TIAN Ning, CHEN Jian, TIAN Kai-wei, ZHOU Ning-xi, HUANG Jue-hao (120)
Model tests on large-section and shallow soil rectangular pipe jacking .....	
.....	PAN Yu-qing, ZHEN Liang, JIANG Hai-li, LI Xiao-jun (125)
Evolution laws of internal forces in rectangular pipe jacking tunnels with large section and shallow soil .....	
.....	ZHU Wei-jie, ZHEN Liang, XU Wen-yun, LI Xiao-jun (130)
Preliminary study on microscopic mechanisms of MICP used for geological carbon sequestration .....	WANG Yu-ze, LU Yun (134)
Model tests on thermal response of phase-change pile in saturated silt foundation ...	TANG Yang, ZHENG Ming-fei, SHI Shi-yong (139)
Seepage stability of plain reservoir dam in arid areas of northern Xinjiang ...	Abdu Shalamu Torson, Zai Na fu yimiti, MA Li-ping (143)
Experimental study on damping ratio of overconsolidated clay under different cyclic confining pressures .....	
.....	HUANG Jue-hao, CHEN Jian, YU Song, YAN Xiao-ling, ZHAO Yong-feng, FU Xiao-dong, MA Chao (147)
Evaluation of hydrodynamic dispersion coefficients of nickel and zinc released from a contaminated clay solidified/stabilized by a low-carbon binder .....	FENG Ya-song, ZHOU Shi-ji, WAN Jia-lei, WANG Shui, DU Yan-jun (151)
Pressuremeter tests and parameter back analysis of deep silty clay .....	
.....	YANG Yu-sheng, LIU Xiao-sheng, PENG Wen-ming, ZHAO Jian-ming, ZHU Kai-bin, ZHU Bin (155)
Simulation experiments on influences of bedrock exposed rate and soil thickness on soil erosion .....	
.....	DENG Da-peng, LIU Qi, LU Yao-ru, REN Biao (160)
One-dimensional "pot cover effect" for migration of gaseous water based on PDV model .....	
.....	TANG Guo-hang, WANG Nai-dong, YAO Yang-ping (164)
Physical modelling of thermal-cone penetration tests .....	MO Pin-qiang, HU Jing, HU Yu-chen, MA Dan-yang, REN Zhi-wen (169)
Laboratory tests on fluvial-thermal erosion of artificial frozen soil .....	WU Yuan-hao, SUN Min, HONG Ze-qun (173)
An automatic identification method for width of shear band of sand in PFC simulations .....	
.....	CHEN Xi, LIU Zong-qi, CUI Liu-sheng, TANG Jian-bin (179)
Stability analysis of high expansive soil slopes based on in-situ monitoring and model tests .....	
.....	REN Jia-li, XIONG Yong, CHENG Yong-hui, HU Sheng-gang, HU Bo (183)
Numerical simulation of frost-heave process in lining canals considering contact behaviors of damage effects .....	
.....	ZHANG Chen, WANG Yi, HAN Xiao-feng, JIN Long (188)
Field tests on bearing capacities of CFG pile and root pile .....	WANG Nian-xiang, ZHOU Chun-er, WU Jia-wu, REN Guo-feng (194)
Bearing capacity of single root pile considering cushion effects .....	
.....	REN Guo-feng, LIU Chao, LIN Xian-cai, CAO Chang-hao, LIAN Chang-qiu (198)
Double-optimization design of trapezoidal canals considering frost-heave resistance and hydraulic section .....	
.....	XU Hu-cheng, LIU Yu-xin, WANG Yi, HAN Xiao-feng, DINA Tursun Ali (203)
Large-scale shear tests and constitutive modeling of unsaturated expansive soil-pile interface .....	
.....	ZHANG Zhi-yuan, QIAN Jian-gu, WANG Cheng (207)
Centrifuge model tests and numerical simulations of horizontal bearing behaviors of monopiles with wings .....	LI Bo, LI Wei (211)
Influence factors for seismic performance of bridge abutment with geosynthetic-reinforced soil (GRS) .....	
.....	LUO Min-min, XU Chao, CHEN Yun, YANG Yang, LIANG Cheng (215)
Characteristics of cumulative deformation and prediction method for pile foundation under cyclic lateral loading considering influences of pile-soil relative stiffness .....	WANG Yang, ZHU Ming-xing, DAI Guo-liang, GONG Wei-ming, LIN Jing-yang (220)
Construction technology and application of mechanized joint placement for concrete linings of canal .....	ZHU Guo-jian (226)