

中国科技期刊卓越行动计划入选期刊



# 铁道科学与工程学报

Journal of Railway Science and Engineering



# 铁道科学与工程学报

2021 年 5 月

第 18 卷第 5 期

总第 134 期

## 目 次

### 高速铁路技术与智慧交通

- 高速铁路路基粗粒土填料颗粒破碎演化特征研究 ..... 王启云, 肖南雄, 张丙强, 项玉龙, 魏心星(1071)  
横风下路堤高度对高速列车气动特性影响 ..... 苗秀娟, 黄瑞鹏, 何侃, 祝百年, 孔繁冰(1081)  
中德高速铁路轨道谱在车桥耦合中的应用对比 ..... 郑晓龙, 徐昕宇, 陈列, 郭建勋(1090)  
Cu-Al<sub>2</sub>O<sub>3</sub>弥散铜高速铁路接触线对弓网动态受流质量的影响研究 ..... 汤文亮, 马浩航, 袁远, 刘仕兵, 喻卓成(1098)  
考虑人工驾驶的动车组列车节能运行优化 ..... 潘洋, 符卓(1105)

### 轨道与基础

- 单轴荷载下聚氨酯固化道床碎石道砟体压缩性能研究 ..... 余思昕, 肖杰灵, 景璞, 杜帅, 熊震威(1113)  
不同细粒含量高压密级配碎石力学特性研究 ..... 赵明志, 邓龙翔, 刘钢, 罗强, 李彦罡(1121)  
地震作用下饱和砂土中斜桩基础动力特性振动台试验研究 ..... 陈文龙, 马建林, 王吉, 王蒙婷(1131)  
砂土地区超长基桩双荷载箱法承载特性试验研究 ..... 陈维超, 杨伟军, 陈浩, 杨建宇(1143)  
一种基于分区段模式土工加筋拉伸应变分析方法 ..... 吕伟华, 刘维正, 孙信, 张继周(1155)  
孔隙水含盐量对上海饱和软黏土冻融特性的影响 ..... 周洁, 李泽垚(1168)  
沙漠腹地高速公路风积沙填料压实特性及填筑方法试验研究 ..... 尹文华, 王旭, 张继周, 刘维正, 马学宁(1177)  
再生集料强化方法和掺量对水泥稳定碎石性能的影响 ..... 李强, 温华梦, 李国芬, 叶万涛, 商健林(1188)

### 桥梁隧道与结构

- 不同加载龄期钢-混结合梁斜拉桥梁段受力性能研究 ..... 方淑君, 张凌瑞, 孙雨石, 聂念从, 王涛(1196)

- 400 m 级铁路 CFST 拱桥合理拱肋内倾角研究 ..... 徐华, 吴宜涛, 解威威, 杨绿峰(1203)  
椭圆双极线性聚能爆破成缝机理及结构优化研究 ..... 吴波, 李华隆, 徐世祥, 张景龙, 韦汉(1213)  
高地应力构造破碎带隧道大变形灾变机制及控制技术研究 ..... 李峰(1222)  
既有地铁隧道上方新建明挖隧道施工控制方案研究 ..... 蒋华春, 黄伟(1231)  
浅埋大断面铁路隧道穿越卵石土层施工优化研究 ..... 杨云, 黄健陵, 万炳宏, 梁瑞军, 魏晓江, 蔡茜(1240)  
硫酸盐干湿循环作用下 CFRP-黏土砖界面黏结性能试验研究 ..... 靳文强, 聂丹, 王琦, 张家玮, 赵建昌, 郭乐乐(1248)  
钢管再生混凝土柱力学性能研究进展 ..... 王兴国, 姜茂林, 张向冈, 王永贵, 牛海成(1256)

## 智能制造与装备

- 基于多任务学习的轨道车辆轴承异常检测方法 ..... 蒋雨良, 曾大懿, 邹益胜, 卢昌宏, 张笑璐(1267)  
轮径差对车轮踏面磨耗和滚动接触疲劳的影响分析 ..... 王红兵, 丁旺才, 宋杨法, 李国芳, 吴步昊, 王相平(1277)  
考虑车轮扁疤的轮轨磨耗演化及其对车线桥系统的影响分析  
..... 王相平, 丁旺才, 田毅, 吴步昊, 王红兵, 李国芳(1289)  
轨道牵引电机铁心材料参数识别 ..... 任晓辉, 杜小渊(1298)

## 运输·物流·工程管理

- 不确定环境下交通网络应急预防护优化研究 ..... 陈学伟, 秦进, 周颖靓(1307)  
多分区响应型接驳公交路径与发车时间的协调优化 ..... 王正式, 谭笑, 高愿, 程向昕(1316)  
西藏地区铁路中小站区能源供给方式综合评价研究 ..... 李雨浓, 鲍学英(1325)  
基于合理缓冲区设置的 PPP 轨道交通项目柔性建设期研究 ..... 易欣, 施晶晶, 张跃斌, 邱凯洁, 邱慧(1333)  
高速公路 PPP 项目利率保障及其期权价值分析 ..... 吴贞瑶, 帅斌, 吕敏(1342)  
知识价值链与全过程工程咨询核心能力作用机理研究——基于系统动力学的建模与仿真  
..... 周涛, 王孟钧, 唐晓莹, 刘柏建, 孙武东, 王青娥(1349)  
基于可变模糊集理论的铁路隧道塌方风险评价 ..... 王婧, 靳春玲, 贡力, 张鑫(1364)

---

责任编辑：蒋学东 英文编审：杨小礼 封面设计：刘谊

期刊基本参数：CN43-1423/U\*2004\*m\*A4\*302\*zh\*P\*¥50.00\*1500\*32\*2021-05

# Journal of Railway Science and Engineering

Volume 18 Number 5

(Sum 134)

May 2021

## CONTENTS

### High-speed Rail Technology and Intelligent Transportation

- Evolution of particle breakage properties for coarse-grained soil filling of subgrade of high-speed railway ..... WANG Qiyun, XIAO Nanxiong, ZHANG Bingqiang, XIANG Yulong, WEI Xinxing(1071)  
Influence of embankment height on aerodynamic performance of high-speed trains under crosswind ..... MIAO Xiujuan, HUANG Ruipeng, HE Kan, ZHU Bainian, KONG Fanbing(1081)  
Comparison of application of track spectrum of high speed railway between China and Germany in vehicle bridge coupling ..... ZHENG Xiaolong, XU Xinyu, CHEN Lie, GUO Jianxun(1090)  
Investigation on the influence of Cu-Al<sub>2</sub>O<sub>3</sub> dispersion copper high-speed railway contact wire on current-collecting quality of pantograph-catenary ..... TANG Wenliang, MA Haohang, YUAN Yuan, LIU Shibing, YU Zhuocheng(1098)  
Energy-saving optimization of EMU trains considering the manual driving ..... PAN Yang, FU Zhuo(1105)

### Track and Foundation

- Compression performance of polyurethane reinforced ballast bed ballast body under uniaxial load ..... YU Sixin, XIAO Jieling, JING Pu, DU Shuai, XIONG Zhenwei(1113)  
Research on mechanical properties of high pressure densely graded gravel with different fine particle content ..... ZHAO Mingzhi, DENG Longxiang, LIU Gang, LUO Qiang, LI Yangang(1121)  
Shaking table test study on dynamic characteristics of batter piles in saturated sand ..... CHEN Wenlong, MA Jianlin, WANG Ji, WANG Mengting(1131)  
Experimental study on bearing characteristics of super-long foundation piles in sandy soil area using the double-load box method ..... CHEN Weichao, YANG Weijun, CHEN Hao, YANG Jianyu(1143)  
A tensile strain analysis approach for basal geosynthetic reinforcement based on different working section mode ..... LÜ Weihua, LIU Weizheng, SUN Xin, ZHANG Jizhou(1155)  
Effect of pore water salt content on freeze-thaw characteristics of Shanghai saturated soft clay ..... ZHOU Jie, LI Zeyao(1168)  
Experimental study on compaction characteristics and filling method of subgrade aeolian sand for expressway in desert hinterland ..... YIN Wenhua, WANG Xu, ZHANG Jizhou, LIU Weizheng, MA Xuening(1177)  
Effects of strengthening methods and content of recycled aggregates on performance of cement stabilized macadam ..... LI Qiang, WEN Huameng, LI Guofen, YE Wantao, SHANG Jianlin(1188)

### Bridge, Tunnel and Structure

- Study on mechanical performance of steel-concrete composite beam cable-stayed bridge section with different loading periods ..... FANG Shujun, ZHANG Lingrui, SUN Yushi, NIE Niancong, WANG Tao(1196)

- Analysis on the value of leaning angle on span of 400 m class concrete filled steel tubular railway arch bridge ..... XU Hua, WU Yitao, XIE Weiwei, YANG Lufeng(1203)
- Research on mechanism and structure optimization of elliptical bipolar shaped charge blasting ..... WU bo, LI Hualong, XU Shixiang, ZHANG Jinglong, WEI Han(1213)
- Study on the formation mechanism and large deformation control of tunnel in structural fracture zone with high in-situ stress ..... LI Feng(1222)
- Study on construction control scheme of new open-cut tunnel over existing metro tunnel ..... JIANG Huachun, HUANG Wei(1231)
- Research on construction optimization of shallow buried large section railwaytunnel crossing pebble soil ..... YANG Yun, HUANG Jianling, WAN Binghong, LIANG Ruijun, WEI Xiaojiang, CAI Xi(1240)
- Drying and watering cycle of sulfate's influence on the adhesion of the interface of the bricks of burnt clay ..... JIN Wenqiang, NIE Dan, WANG Qi, ZHANG Jiawei, ZHAO Jianchang, GUO Lele (1248)
- Research progress on mechanical property for recycled aggregate concrete-filledsteel tubular columns ..... WANG Xingguo, JIANG Maolin, ZHANG Xianggang, WANG Yonggui, NIU Haicheng(1256)

## **Intelligent Manufacturing and Equipment**

- Abnormal detection method of rail vehicle bearing based on multi task learning ..... JIANG Yuliang, ZENG Dayi, ZOU Yisheng, LU Changhong, ZHANG Xiaolu(1267)
- Analysis of the influence of wheel diameter difference on wheel tread wear androlling contact fatigue ..... WANG Hongbing, DING Wangcai, SONG Yangfa, LI Guofang, WU Buha, WANG Xiangping(1277)
- Analysis of wheel-rail wear evolution considering wheel flat and its influence onvehicle-track-bridge system ..... WANG Xiangping, DING Wangcai, TIAN Yi, WU Buha, WANG Hongbing, LI Guofang(1289)
- Material parameter identification of traction motor core ..... REN Xiaohui, DU Xiaoyuan(1298)

## **Transportation•Logistics•Engineering Management**

- Optimization of transportation network emergency prevention in uncertain environments ..... CHEN Xuewei, QIN Jin, ZHOU Yingliang(1307)
- Coordinated optimization of route and departure time formulti-partition responsive feeder transit ..... WANG Zhengwu, TAN Xiao, GAO Yuan, CHENG Xiangxin(1316)
- Research on comprehensive evaluation of energy supply mode in middle and small railway stations in tibet ..... LI Yunong, BAO Xueying(1325)
- Research on flexible construction time of PPP rail transit project based on rational buffer setting ..... YI Xin, SHI Jingjing, ZHANG Yuebin, QIU Kajie, QIU Hui(1333)
- Interest rate guarantee and option value analysis of highway PPP (Public-Private Partnerships) projects ..... WU Zhenyao, SHUAI Bin, LÜ Min(1342)
- A system dynamics approach for exploring the influence of knowledge value chains on the core competence of whole-process engineering consulting ..... ZHOU Tao, WANG Mengjun, TANG Xiaoying, LIU Baijian, SUN Wudong, WANG Qinge(1349)
- Risk assessment of railway tunnel collapse based on variable fuzzy set theory ..... WANG Jing, JIN Chunling, GONG Li, ZHANG Xin(1364)