

ISSN 1009-6744

CN 11-4520/U

# 交通运输 系统工程与信息

JOURNAL OF TRANSPORTATION  
SYSTEMS ENGINEERING AND INFORMATION TECHNOLOGY

2018年8月  
August, 2018

第18卷 第4期  
Vol.18 No.4

ISSN 1009-6744



9 771009 674189

2001年创刊

El Compendex美国《工程索引》收录  
中国科学引文数据库(CSCD)收录  
《中文核心期刊要目总览》(北京大学图书馆)收录  
中国科技论文与引文数据库(CSTPCD)收录  
中国学术期刊综合评价数据库来源期刊  
《中国学术期刊文摘(CSAC)》收录  
中国核心期刊(遴选)数据库收录  
中国知识资源总库(CNKI)全文收录  
万方数据—数字化期刊群全文收录  
中文科技期刊数据库全文收录  
SCOPUS文摘引文数据库收录

# 交通运输系统工程与信息(双月刊)

## (JIAOTONG YUNSHU XITONG GONGCHENG YU XINXI)

第 18 卷 第 4 期 2018 年 8 月

### 目 次

#### 决策论坛

- 服务雄安·交通光电网创新发展论坛——“交通 7+1 论坛”第五十一次会议 ..... 彭宏勤,张国伍( 1 )
- 保障公益性运输服务的铁路客票管理策略 ..... 韩舒怡,荣朝和( 5 )

#### 综合交通运输体系论坛

- 绿色多式联运随机优化策略 ..... 李 珺,杨 斌,朱小林( 11 )
- 碳排放约束下我国航空公司全要素生产率研究 ..... 黄赶祥,景崇毅,王红岩( 19 )
- 基于广义出行费用的城市综合交通方式优势出行距离研究 ..... 范 琪,王 炜,华雪东,魏雪延,梁鸣璋( 25 )
- 基于 Vine Copula 的原油海运网络中节点连通可靠性研究 ..... 王 爽,吕 靖,赖成寿( 32 )

#### 智能交通系统与信息技术

- 基于路面指纹的高精度车辆定位 ..... 王相龙,胡钊政,李祎承,黄 刚,蔡 浩( 38 )
- 面向智能交通的单目视觉测距方法研究 ..... 邹 斌,袁宇翔( 46 )
- 面向班型动态生成的地服人员排班算法 ..... 卢 敏,王 莉( 54 )
- 基于实时信息的公交运行速度控制策略与算法研究 ..... 严 海,刘润坤( 61 )
- 信号控制四路环形交叉口多进口协同放行方法 ..... 马新露,杨兴清( 69 )
- 逆向可变车道释放特性及其安全评价 ..... 曲昭伟,奇兴族,陈永恒,陶楚青,白乔文,刘芳宏( 76 )
- 不良交通流状态实时监测支持向量机模型算法研究 ..... 游锦明,方守恩,唐 棠,张兰芳( 83 )
- 基于时空聚类算法的轨迹停驻点识别研究 ..... 周 洋,杨 超( 88 )
- 带有最优流量记忆时间差的一类新格子模型 ..... 翟 聪,刘伟铭,黄 玲( 96 )

#### 系统工程理论与方法

- 基于驻站和限流的组合公交控制策略研究 ..... 黄青霞,贾 斌,强生杰,肖 尧(103)
- 基于车站滞留风险的应急驻车点选址研究 ..... 刘 爽,支晓宇,陈绍宽,兴 妍(110)
- 考虑出行者损失厌恶的后悔随机用户均衡模型 ..... 赵 磊,关宏志,张新洁,赵鹏飞(116)
- 考虑随机路网能力退化的连续双参考点用户均衡模型 ..... 魏庆琦,肖 伟(123)
- 齐当别视觉下的出行方式偏好反转研究 ..... 张 年,罗 霞,邓 燕(130)
- 城市货运车辆选择行为模型及应用 ..... 张 戎,李 璐,简文良(135)
- 危险货物道路运输风险复杂系统及风险测度模型与应用——以液氯运输为例 ..... 王海星,梁倩倩(142)
- 滑动窗窗体长度及滑动步长对事故多发路段鉴别影响 ..... 孟祥海,张道玉,吴佩洁(148)
- 求解双目标带时间窗车辆路径问题的蚁群算法 ..... 柴 荻,何瑞春,苏江省,宋宇博,代存杰,马昌喜(156)
- 基于拉格朗日松弛的高速铁路列车运行图新增运行线局部调整模型 ..... 江 峰,倪少权,吕红霞(163)
- 铁路钢轨网格化维修规划优化编制模型 ..... 白 磊,贾传峻,李 擎,刘仍奎,孙全欣(171)
- 集装箱码头装船顺序和场桥行驶路径联合优化 ..... 郭文文,计明军,祝慧灵,王清斌(178)
- 航班延误信息下旅客选择行为模型及实证 ..... 江 红,任新惠(188)
- 基于 Adaptive Lasso 与 RF 的航班运行风险预测改进研究 ..... 王岩韬,陈冠铭,刘 毓,杨远浩,赵 航(194)
- 一种改进的民用航空网络空间脆弱性模型 ..... 李 航,胡小兵(202)

#### 案例分析

- 基于小客车燃油核算模型的政策节能效果分析 ..... 刘宇环,姚思建,谷 岩,李 萌(209)
- 基于深度 CNN-LSTM-ResNet 组合模型的出租车需求预测 ..... 段宗涛,张 凯,杨 云,倪园园,SAURAB Bajgain(215)
- 基于 AFC 数据和 RF 模型的城轨车站服务功能分类 ..... 王子甲,刘海旭,TAKU Fujiyama(224)
- 高速公路 ETC 客户细分方法研究 ..... 钱 超,杨 孟,耿 健,许宏科(231)
- 基于多维数据的高速公路服务水平实时判别方法 ..... 赵文忠,耿立艳,梁毅刚,张占福(240)

第十届交通运输研究国际学术会议(ICTTS'2018)在北京召开 ..... (239)

期刊基本参数 CN11-4520/U\*2001\*b\*16\*248\*zh+en\*P\*¥ 20.00\*3000\*35\*2018-08\*n

# TRANSPORTATION SYSTEMS ENGINEERING & INFORMATION TECHNOLOGY (BIMONTHLY)

Vol. 18 (August, 2018) No. 4

## CONTENTS

### Decisionmaking Forum

- Serving for Xiong'an New Area and Innovation of Traffic Photoelectric Network ..... PENG Hong-qin, ZHANG Guo-wu( 1 )  
Public Service Protection Constrained Railway Seat Inventory Control Policy ..... HAN Shu-yi, RONG Chao-he( 5 )

### Forum about Comprehensive Transportation System

- A Green Intermodal Transportation Stochastic Optimization Strategy ..... LI Jun, YANG Bin, ZHU Xiao-lin( 11 )  
Total Factor Productivity of China Airlines under Carbon Emission Constraints ... HUANG Gan-xiang, JING Chong-yi, WANG Hong-yan( 19 )  
Dominant Transportation Distance for Multi Transportation Modes in Urban Integrated Transportation Network Based on General Travel Costs ..... FAN Qi, WANG Wei, HUA Xue-dong, WEI Xue-yan, LIANG Ming-zhang( 25 )  
Connectivity Reliability of Nodes in the Maritime Transportation Network of Crude Oil Based on Vine Copulas ..... WANG Shuang, LV Jing, LAI Cheng-shou( 32 )

### Intelligent Transportation System and Information Technology

- High Accuracy Vehicle Localization by Referring to Pavement Fingerprint ..... WANG Xiang-long, HU Zhao-zheng, LI Yi-cheng, HUANG Gang, CAI Hao( 38 )  
High Precision Distance Measurement Based on Monocular Vision for Intelligent Traffic ..... ZOU Bin, YUAN Yu-xiang( 46 )  
Dynamic Group Generation for Airport Ground Staff Scheduling ..... LU Min, WANG Li( 54 )  
Bus Speed Control Strategy and Algorithm Based on Real-time Information ..... YAN Hai, LIU Run-kun( 61 )  
Multi-approach Collaborative Release Method of the Signalized Four-leg Roundabout ..... MA Xin-lu, YANG Xing-qing( 69 )  
Release Characteristics and Safety Evaluation of Intersection with Reversing Variable Lane ..... QU Zhao-wei, QI Xing-zu, CHEN Yong-heng, TAO Chu-qing, BAI Qiao-wen, LIU Fang-hong( 76 )  
A Support Vector Machine Approach on Real-time Hazardous Traffic State Detection ..... YOU Jin-ming, FANG Shou-en, TANG Tang, ZHANG Lan-fang( 83 )  
Anchors Identification in Trajectory Based on Temporospatial Clustering Algorithm ..... ZHOU Yang, YANG Chao( 88 )  
A Class of New Lattice Model with Consideration of the Optimal Current Changes with Memory ..... ZHAI Cong, LIU Wei-ming, HUANG Ling( 96 )

### System Engineering Theory and Methods

- Integrated Bus Control Strategy Considering Holding and Limited-boarding ... HUANG Qing-xia, JIA Bin, QIANG Sheng-jie, XIAO Yao(103)  
Emergency Bus Reserve Location Based on Risk Analysis of Passengers Stranded at Urban Rail Transit Station ..... LIU Shuang, ZHI Xiao-yu, CHEN Shao-kuan, XING Yan(110)  
A Regret-based Stochastic User Equilibrium Model Considering Travelers' Loss Aversion ..... ZHAO Lei, GUAN Hong-zhi, ZHANG Xin-jie, ZHAO Peng-fei(116)  
A User Equilibrium Model Considering a Degradable Transportation Network and Double Reference Points ... WEI Qing-qi, XIAO Wei(123)  
Preference Reversals Phenomenon of Travel Mode under the Equate-to-differentiate Interpretation ..... ZHANG Nian, LUO Xia, DENG Yan(130)  
Urban Freight Vehicle Type Choice Model and Application ..... ZHANG Rong, LI Lu, JIAN Wen-liang(135)  
Complex System of the Risk on Dangerous Goods Transportation & Risk Assessment Model and Application: Take Liquid Chlorine as an Example ..... WANG Hai-xing, LIANG Qian-qian(142)  
The Impact of Window Size and Sliding Length on the Results of Black Spots Identification ..... MENG Xiang-hai, ZHANG Dao-yu, WU Pei-jie(148)  
An Ant Colony Optimization for the Bi-objective Vehicle Routing Problem with Time Windows on Multigraph ..... CHAI Huo, HE Rui-chun, SU Jiang-sheng, SONG Yu-bo, DAI Cun-jie, MA Chang-xi(156)  
A High-speed Railway New-added Train Timetable Partial Adjustment Model Based on Lagrangian Relaxation ..... JIANG Feng, NI Shao-quan, LV Hong-xia(163)  
Optimal Maintenance Planning Model for Railway Rail Grids ..... BAI Lei, JIA Chuan-jun, LI Qing, LIU Reng-kui, SUN Quan-xin(171)  
Joint Optimization of Loading Sequence and Yard Crane Travel Route in Container Terminals ..... GUO Wen-wen, JI Ming-jun, ZHU Hui-ling, WANG Qing-bin(178)  
Passenger Choice Behavior Model and Empirical Study under Flight Delay Information ..... JIANG Hong, REN Xin-hui(188)  
Flight Operations Risk Improvement Prediction Based on Adaptive Lasso and RF ..... WANG Yan-tao, CHEN Guan-ming, LIU Yu, YANG Yuan-hao, ZHAO Hang(194)  
An Improved Spatial Vulnerability Model for Civil Aviation Network ..... LI Hang, HU Xiao-bing(202)

### Cases Analysis

- Energy-saving Effect Analysis of Policies Based on Passenger Cars Fuel Accounting Model ..... LIU Yu-huan, YAO En-jian, GU Yan, LI Meng(209)  
Taxi Demand Prediction Based on CNN-LSTM-ResNet Hybrid Depth Learning Model ..... DUAN Zong-tao, ZHANG Kai, YANG Yun, NI Yuan-yuan, SAURAB Bajgain(215)  
Metro Station Classification by Service Function Based on AFC Data and RF Method ..... WANG Zi-jia, LIU Hai-xu, TAKU Fujiyama(224)  
Customer Segmentation for Expressway ETC System ..... QIAN Chao, YANG Meng, GENG Jian, XU Hong-ke(231)  
A Real-time Identification Method of Highway Service Level Based on Multi-dimension Data ..... ZHAO Wen-zhong, GENG Li-yan, LIANG Yi-gang, ZHANG Zhan-fu(240)