2019 年长安大学
SSCI 论文统计

长安大学图书馆学科服务工作组

2020 年 12 月

长大图书馆

一、SSCI

表 12015-2019 年按第一作者被 SSCI 收录论文的数量

发表年份	发文量	占近 5 年发文总量的百分比
2015	7	2.8%
2016	13	5.1%
2017	36	14.3%
2018	71	28.2%
2019	125	49.6%
合计	252	100%

不区分第一作者和第二作者进行统计，长安大学 2019 年被 SSCI 数据库收录的论文有 162 篇，其中第一作者机构为长安大学的有 125 篇,与 2015-2018 这四年相比，数量有大幅增长。

表 22019 年按第一作者 SSCI 发表论文来源期刊

来源期刊	发文数量	影响因子	占 2019 年总发文量的百分比
SUSTAINABILITY	40	2.576	32.00%
IEEE ACCESS	8	3.745	6.40%
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	8	2.468	6.40%
JOURNAL OF ADVANCED TRANSPORTATION	6	1.670	4.80%
ADVANCES IN MECHANICAL ENGINEERING	5	1.161	4.00%
ACCIDENT ANALYSIS AND PREVENTION	3	3.655	2.40%
ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	3	3.056	2.40%
EUROPEAN TRANSPORT RESEARCH REVIEW	3	2.275	2.40%
TRAFFIC INJURY PREVENTION	3	1.380	2.40%
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	3	2.849	2.40%
TRANSPORTATION RESEARCH PART D-TRANSPORT AND ENVIRONMENT	3	4.577	2.40%

INTERNATIONAL JOURNAL OF GEOGRAPHICAL INFORMATION SCIENCE	2	3.733	1.60%
JOURNAL OF CLEANER PRODUCTION	2	7.246	1.60%
MATHEMATICAL PROBLEMS IN ENGINEERING	2	1.009	1.60%
NEURAL COMPUTING & APPLICATIONS	2	4.774	1.60%
PLOS ONE	2	2.740	1.60%
SAFETYSCIENCE	2	4.105	1.60%
SENSORS	2	3.275	1.60%
TRANSPORTATION	2	4.082	1.60%
APPLIED SCIENCES-BASEL	1	2.474	0.80%
CHAOS SOLITONS & FRACTALS	1	3.764	0.80%
COMPUTATIONAL INTELLIGENCE AND NEUROSCIENCE	1	2.284	0.80%
COMPUTERS & INDUSTRIAL ENGINEERING	1	4.135	0.80%
DISCRETE DYNAMICS IN NATURE AND SOCIETY	1	0.870	0.80%
EARTH SCIENCE INFORMATICS	1	1.450	0.80%
ENGINEERING CONSTRUCTION AND ARCHITECTURAL MANAGEMENT	1	2.160	0.80%
ENTROPY	1	2.494	0.80%
INTERNATIONAL JOURNAL OF LOGISTICS-RESEARCH AND APPLICATIONS	1	2.152	0.80%
JOURNAL OF EDUCATION FOR TEACHING	1	1.483	0.80%
JOURNAL OF RETAILING AND CONSUMER SERVICES	1	4.219	0.80%
MOBILE INFORMATION SYSTEMS	1	1.508	0.80%
MULTIMEDIA TOOLS AND APPLICATIONS	1	2.313	0.80%
POLISH JOURNAL OF ENVIRONMENTALSTUDIES	1	1.383	0.80%
RENEWABLE ENERGY	1	6.274	0.80%
SAFETY SCIENCE	1	4.105	0.80%
STUDIES IN HIGHER EDUCATION	1	3.000	0.80%
SUSTAINABLE CITIES AND	1	5.268	0.80%

SOCIETY			
SYMMETRY-BASEL	1	2.645	0.80%
TECHNOLOGY ANALYSIS & STRATEGIC MANAGEMENT	1	1.867	0.80%
TRANSPORTATION RESEARCH PART C-EMERGING TECHNOLOGIES	1	6.077	0.80%
TRANSPORTATION RESEARCH PART F-TRAFFIC PSYCHOLOGY AND BEHAVIOUR	1	2.518	0.80%
TRANSPORTMETRICA A-TRANSPORT SCIENCE	1	2.424	0.80%
TRANSPORTMETRICA B-TRANSPORT DYNAMICS	1	2.214	0.80%

表 3　2019 年我校发表 SSCI 论文的研究方向

研究方向	论文数量	占 2019 年总发文量的百分比
Science & Technology - Other Topics; Engineering; Environmental Sciences & Ecology	42	33.60%
Environmental Sciences & Ecology; Public, Environmental & Occupational Health	11	8.80%
Computer Science; Engineering; Telecommunications	8	6.40%
Engineering; Transportation	7	5.60%
Transportation	6	4.80%
Thermodynamics; Engineering	5	4.00%
Environmental Sciences & Ecology	4	3.20%
Engineering; Operations Research & Management Science	3	2.40%
Engineering; Public, Environmental & Occupational Health; Social Sciences - Other Topics; Transportation	3	2.40%
Environmental Sciences & Ecology; Transportation	3	2.40%
Public, Environmental & Occupational Health; Transportation	3	2.40%
Science & Technology - Other Topics	3	2.40%
Business & Economics	2	1.60%
Chemistry; Engineering; Instruments & Instrumentation	2	1.60%
Computer Science	2	1.60%
Computer Science; Engineering	2	1.60%
Computer Science; Geography; Physical Geography; Information Science & Library Science	2	1.60%
Education & Educational Research	2	1.60%

Engineering; Mathematics	2	1.60%
Business & Economics; Science & Technology - Other Topics	1	0.80%
Chemistry; Engineering; Materials Science; Physics	1	0.80%
Computer Science; Geology	1	0.80%
Computer Science; Telecommunications	1	0.80%
Construction & Building Technology; Science & Technology - Other Topics; Energy & Fuels	1	0.80%
Engineering; Business & Economics	1	0.80%
Mathematical & Computational Biology; Neurosciences & Neurology	1	0.80%
Mathematics; Physics	1	0.80%
Mathematics; Science & Technology - Other Topics	1	0.80%
Operations Research & Management Science; Transportation	1	0.80%
Physics	1	0.80%
Psychology; Transportation	1	0.80%
Science & Technology - Other Topics; Energy & Fuels	1	0.80%

表 4　2019 年长安大学发表 SSCI 论文数量前 5 位的期刊

来源期刊	发文数量	2019 年影响因子
SUSTAINABILITY	40	2.576
IEEE ACCESS	8	3.745
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	8	2.468
JOURNAL OF ADVANCED TRANSPORTATION	6	1.670
ADVANCES IN MECHANICAL ENGINEERING	5	1.161

2019 年，长安大学发表 SSCI 论文数量最多的期刊是《SUSTAINABILITY》，共计 40 篇，占总发文量的 32.00%，其 2019 年的影响因子是 2.576。

表 5 按学院发表 SSCI 论文统计表

学院	发文数量	被引总次数
公路学院	42	86
经济与管理学院	42	87
汽车学院	17	36
建筑学院	6	12
环境科学与工程学院	5	19
地质工程与测绘学院	3	0
信息工程学院	3	9
理学院	2	2

地球科学与资源学院	1	3
电子与控制学院	1	4
工程机械学院	1	0
公共管理与法学院	1	3
外国语学院	1	0

由表 5 可知，2019 年发表 SSCI 论文最多的学院为公路学院和经济与管理学院，均有 42 篇，其次是汽车学院，有 17 篇。

表 6 发表 2 篇以上 SSCI 的作者及学院分布

姓名	所属学院	发文数量	被引次数
毛新华	经济与管理学院	5	5
孙启鹏	经济与管理学院	5	8
王永岗	公路学院	4	26
杜强	经济与管理学院	4	23
马飞	经济与管理学院	4	10
张静晓	经济与管理学院	3	4
董亚萍	公路学院	2	1
段志浩	公路学院	2	2
贾果玲	公路学院	2	8
李多	公路学院	2	2
李孟晖	公路学院	2	0
马书红	公路学院	2	0
张弛	公路学院	2	0
周备	公路学院	2	0
周吉喆	建筑学院	2	0
吴雪莹	经济与管理学院	2	0
Zhang Zuobo	经济与管理学院	2	2
付锐	汽车学院	2	7
王畅	汽车学院	2	3
徐婷	汽车学院	2	0

由表 6 可知，发表 SSCI 2 篇以上的作者基本分布在公路学院、经济与管理学院和汽车学院。

对各学院 SSCI 论文第一作者发文统计如下：

表 7 公路学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	王永岗	公路学院	4	26
2	董亚萍	公路学院	2	1
3	段志浩	公路学院	2	2
4	贾果玲	公路学院	2	8
5	李多	公路学院	2	2

6	李孟晖	公路学院	2	0
7	马书红	公路学院	2	0
8	张弛	公路学院	2	0
9	周备	公路学院	2	0
10	韩雪艳	公路学院	1	0
11	陈琳	公路学院	1	2
12	chen xiao	公路学院	1	1
13	董辰昊	公路学院	1	2
14	高超	公路学院	1	2
15	蒋应军	公路学院	1	3
16	雷天	公路学院	1	0
17	李培坤	公路学院	1	1
18	Li yan	公路学院	1	4
19	梁国华	公路学院	1	0
20	Lyu, Pu	公路学院	1	0
21	邵阳	公路学院	1	3
22	宋京妮	公路学院	1	0
23	王朝辉	公路学院	1	14
24	汪帆	公路学院	1	0
25	武娜	公路学院	1	0
26	杨柳	公路学院	1	10
27	杨杰	公路学院	1	0
28	余丽洁	公路学院	1	3
29	张晓东	公路学院	1	1
30	张宇亭	公路学院	1	1
31	周志军	公路学院	1	0

表 8 经济与管理学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	马飞	经济与管理学院	4	10
2	杜强	经济与管理学院	3	23
3	张静晓	经济与管理学院	3	7
4	Baixue	经济与管理学院	1	5
5	Haochanchan	经济与管理学院	1	1
6	Hehaonan	经济与管理学院	1	0
7	金宇明	经济与管理学院	1	0
8	李倩	经济与管理学院	1	0
9	李翌	经济与管理学院	1	12
10	孙启鹏	经济与管理学院	5	8
11	李兆磊	经济与管理学院	1	1
12	刘丹	经济与管理学院	1	1

13	毛新华	经济与管理学院	5	5
14	谭玲玲	经济与管理学院	1	0
15	王海菱	经济与管理学院	1	0
16	王秋玲	经济与管理学院	1	4
17	王一佼	经济与管理学院	1	1
18	魏晓	经济与管理学院	1	0
19	吴雪莹	经济与管理学院	2	0
20	徐升	经济与管理学院	1	0
21	Yanborui	经济与管理学院	1	0
22	杨慧军	经济与管理学院	1	1
23	Zhangyu	经济与管理学院	1	6
24	张作博	经济与管理学院	2	2

表 9 汽车学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	付锐	汽车学院	3	7
2	王畅	汽车学院	2	3
3	徐婷	汽车学院	2	0
4	陈涛	汽车学院	1	3
5	郭应时	汽车学院	1	5
6	胡月琦	汽车学院	1	1
7	刘静	汽车学院	1	2
8	牛世峰	汽车学院	1	1
9	孙秦豫	汽车学院	1	2
10	阎莹	汽车学院	1	3
11	苑虎	汽车学院	1	0
12	张智	汽车学院	1	1
13	赵轩	汽车学院	1	8

表 10 建筑学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	张磊	建筑学院	1	1
2	侯全华	建筑学院	1	8
3	沈童	建筑学院	1	2
4	许娟	建筑学院	1	1
5	周吉喆	建筑学院	2	0

表 11 环境科学与工程学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	任冲锋	环境科学与工程学院	1	1

2	贾慧	环境科学与工程学院	1	6
3	徐盼盼	环境科学与工程学院	1	6
4	杨建涛	环境科学与工程学院	1	3
5	张奇莹	环境科学与工程学院	1	3

表 12 地质工程与测绘学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	康军梅	地质工程与测绘学院	1	0
2	许锐	地质工程与测绘学院	1	0
3	汪俊	地质工程与测绘学院	1	0

表 13 信息工程学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	李颖	信息工程学院	1	2
2	宋焕生	信息工程学院	1	3
3	赵祥模	信息工程学院	1	4

表 14 理学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	张文彬	理学院	1	1
2	吴田军	理学院	1	1

表 15 其它学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	李换换	地球科学与资源学院	1	3
2	路庆昌	电子与控制学院	1	4
3	杨延璞	工程机械学院	1	0
4	蔡洁	公共管理与法学院	1	3
5	林忠	外国语学院	1	0

附录

公路学院

第 1 条，共 42 条

标题: Evaluating the impact of setting delineators in tunnels based on drivers' visual characteristics

作者: Han, XY (Han, Xueyan); Shao, Y (Shao, Yang); Pan, BH (Pan, Binghong); Yu, P (Yu, Peng); Li, B (Li, Bin)

来源出版物: PLOS ONE **卷:** 14 **期:** 12 **文献号:** e0225799 **DOI:** 10.1371/journal.pone.0225799 **出版年:** DEC 18 2019

Web of Science 核心合集中的 "被引频次": 0

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使用次数 (最近 180 天): 2

使用次数 (2013 年至今): 2

引用的参考文献数: 47

摘要: Poor visual conditions in tunnels can easily cause traffic accidents, and it is difficult for emergency services to reach these areas. As an economical and effective visual guiding device, delineators have attracted wide attention. Based on the actual alignment of the Qinling Mountain No.1, No.2 and No.3 tunnels of the G5 Expressway in Xi'an City (Shaanxi Province, China), this paper designs a simulation experiment. Through a simulator study and a questionnaire survey, this paper discusses how delineators affect drivers' visual characteristics (including fixation area and pupil size) in different settings and with different road alignments. Twenty-five subjects participated in this research. The results show that setting delineators in tunnels can continuously guide drivers' vision and attract their attention to focus on the pavement. Compared with setting only pavement delineators, setting wall delineators and pavement delineators together can provide better guiding effects and ensure driving safety in both straight and curved sections. In addition, when driving in tunnels equipped with delineators, especially tunnels with both wall delineators and pavement delineators, the participants exhibited a smaller pupil diameter and lower pupil diameter change rate. In terms of the relationship between pupil size and road alignment, the results indicated that regardless of what type of delineator was used, the drivers exhibited the smallest pupil size and lowest pupil change rate when driving on the straight section compared with the curved sections.

入藏号: WOS:000526666100001

PubMed ID: 31851692

语言: English

文献类型: Article

KeyWords Plus: INTERVENTION INFLUENCE; RUTTING MITIGATION; ROAD TUNNELS; BEHAVIOR; PUPIL; MODEL

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第 2 条，共 42 条

标题: Analysis of Emergency Evacuation Modal Choice Behavior with Spatial Indicators: Case Study in Xi'an, China

作者: Duan, ZH (Duan, Zhihao); Xu, JL (Xu, Jinliang); Ru, H (Ru, Han); Dong, YP (Dong, Yaping); Liu, XL (Liu, Xingliang)

来源出版物: SUSTAINABILITY 卷: 11 期: 24 文献号: 7023 **DOI:** 10.3390/su11247023 出版年: DEC 2 2019

Web of Science 核心合集中的 "被引频次": 0

被引频次合计: 0

使用次数 (最近 180 天): 2

使用次数 (2013 年至今): 2

引用的参考文献数: 18

摘要: To reduce the impact of a natural or man-made disaster, an evacuation is often implemented to transfer the population in the potentially impacted area to a safe zone. Evacuation is an effective measure for dealing with emergency events. This paper presents a multinomial logit model for modal choice behavior in a short-notice emergency evacuation, which incorporates spatial indicators into the utility function. The study examined the determinants of evacuees' modal choice for three evacuation distances and analyzed determinants impacting the mechanism of the modal choice decision process. The data collected in Xi'an was used to provide empirical evidence for the relationship between spatial indicators and modal choice behavior. The findings of this study will help emergency planners and policy-makers develop strategies for evacuation planning and will enable a

better understanding of emergency modal choice behaviors.

入藏号: WOS:000506899000133

语言: English

文献类型: Article

作者关键词: modal choice behavior; spatial indicators; logit analysis; emergency evacuation

KeyWords Plus: LAND-USE

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ISO 来源出版物缩写: Sustainability

来源出版物页码计数: 10

第 3 条，共 42 条

标题: Understanding Thermal Impact of Roads on Permafrost Using Normalized Spectral Entropy

作者: Zhang, C (Zhang, Chi); Zhang, H (Zhang, Hong); Zhao, FQ (Zhao, Fuqiang); Sun, J (Sun, Jing)

来源出版物: SUSTAINABILITY 卷: 11 期: 24 文献号: 7177 **DOI:** 10.3390/su11247177 出版年: DEC 2 2019

Web of Science 核心合集中的 "被引频次": 0

被引频次合计: 0

使用次数 (最近 180 天): 0

使用次数 (2013 年至今): 1

引用的参考文献数: 40

摘要: Permafrost is characterized by low temperature, and its thermal stability is key to geohydrological cycles, energy exchange, and climate regulation. Increasing engineering activities, i.e., road construction and operations, are affecting the thermal stability in permafrost regions and have already led to the degradation of permafrost and caused environmental problems. To understand the spatiotemporal influence of road construction and operations on the thermal dynamics in permafrost regions, we conducted a study in the Ela Mountain Pass where multiple roads intersect on the Qinghai-Tibet Plateau (QTP) and calculated the thermal dynamics from 2000 to 2017 using normalized spectral entropy (measuring the disorderliness of time-series data). Our results indicate that road level is a significant influencing factor, where high-level roads (expressways) exhibit stronger thermal impacts than low-level roads (province- and county-level roads). Our results also indicate that duration of operation is the most significant factor that determines the thermal impacts of roads on permafrost: the thermal impacts of the newly paved expressway are positively related to elevation, while the thermal impacts of the old expressway are positively related to less vegetated areas. The study provides an excellent method for understanding the spatiotemporal impacts of engineering activities on the temperature dynamics in permafrost regions, thereby helping policymakers in China and other countries to better plan their infrastructure projects to avoid environmentally vulnerable regions. The study also calls for advanced techniques in road maintenance, which can reduce the accumulated disturbance of road operations on permafrost regions.

入藏号: WOS:000506899000278

语言: English

文献类型: Article

作者关键词: entropy; thermal impact; Qinghai-Tibet Plateau; road construction; permafrost

KeyWords Plus: CLIMATE-CHANGE; AIR-TEMPERATURE; EMBANKMENT; DEGRADATION; SURFACE; DYNAMICS; HIGHWAY; BENEATH; AIRPORT

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第 4 条，共 42 条
标题: Estimating Driving Fatigue at a Plateau Area with Frequent and Rapid Altitude Change
作者: Wang, F (Wang, Fan); Chen, H (Chen, Hong); Zhu, CH (Zhu, Cai-hua); Nan, SR (Nan, Si-rui); Li, Y (Li, Yan)
来源出版物: SENSORS 卷: 19 期: 22 文献号: 4982 **DOI:** 10.3390/s19224982 出版年: NOV 2019
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摘要: Due to the influence of altitude change on a driver's heart rate, it is difficult to estimate driving fatigue using heart rate variability (HRV) at a road segment with frequent and rapid altitude change. Accordingly, a novel method of driving fatigue estimation for driving at plateau area with frequent altitude changes is proposed to provide active safety monitoring in real time. A naturalistic driving experiment at Qinghai-Tibet highway was conducted to collect drivers' electrocardiogram data and eye movement data. The results of the eye movement-based method were selected to enhance the HRV-based driving fatigue degree estimation method. A correction factor was proposed to correct the HRV-based method at the plateau area so that the estimation can be made via common portable devices. The correction factors for both upslope and downslope segments were estimated using the field experiment data. The results on the estimation of revised driving fatigue degree can describe the driver's fatigue status accurately for all the road segments at the plateau area with altitudes from 3540 to 4767 m. The results can provide theoretical references for the design of the devices of active safety prevention.

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语言: English

文献类型: Article

作者关键词: driving fatigue; rapid altitude change; correction factor; heart rate variability; blinking frequency; Qinghai-Tibet Plateau

KeyWords Plus: HEART-RATE-VARIABILITY; DRIVER; BEHAVIOR; RISK; MODELS; SAFETY

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第 5 条，共 42 条

标题: Analysis of Prediction Accuracy under the Selection of Optimum Time Granularity in Different Metro Stations

作者: Li, PK (Li, Peikun); Ma, CQ (Ma, Chaoqun); Ning, J (Ning, Jing); Wang, Y (Wang, Yun); Zhu, CH (Zhu, Caihua)

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摘要: The improvement of accuracy of short-term passenger flow prediction plays a key role in the efficient and sustainable development of metro operation. The primary objective of this study is to explore the factors that influence prediction accuracy from time granularity and station class. An important aim of the study was also in presenting the proposition of change in a forecasting method. Passenger flow data from 87 Metro stations in Xi'an was collected and analyzed. A framework of short-term passenger flow based on the Empirical Mode Decomposition-Support Vector Regression (EMD-SVR) was proposed to predict passenger flow for different types of stations. Also, the relationship between the generation of passenger flow prediction error and passenger flow data was investigated. First, the metro network was classified into four categories by using eight clustering factors based on the characteristics of inbound passenger flow. Second, Pearson correlation coefficient was utilized to explore the time interval and time granularity for short-term passenger flow prediction. Third, the EMD-SVR was used to predict the passenger flow in the optimal time interval for each station. Results showed that the proposed approach has a significant improvement compared to the traditional passenger flow forecast approach. Lookback Volatility (LVB) was applied to reflect the fluctuation difference of passenger flow data, and the linear fitting of prediction error was conducted. The goodness-of-fit (R-2) was found to be 0.768, indicating a good fitting of the data. Furthermore, it revealed that there are obvious differences in the prediction error of the four kinds of stations.
入藏号: WOS:000493525500140
语言: English
文献类型: Article
作者关键词: metro station; passenger flow prediction; time granularity; forecast error; lookback-volatility
KeyWords Plus: EMPIRICAL MODE DECOMPOSITION; TRAFFIC FLOW PREDICTION; PASSENGER FLOW; SVM
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第 6 条，共 42 条
标题: College Students' Shared Bicycle Use Behavior Based on the NL Model and Factor Analysis
作者: Ma, SH (Ma, Shuhong); Zhou, YC (Zhou, Yechao); Yu, ZL (Yu, Zhoulin); Zhang, Y (Zhang, Yan)
来源出版物: SUSTAINABILITY **卷:** 11 **期:** 17 **文献号:** 4538 **DOI:** 10.3390/su11174538 **出版年:** SEP 1 2019
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摘要: The rise and rapid development of bicycle sharing brings great convenience to residents' travel and transfer, and also has a profound impact on the travel structure of cities. As college students make up a major share of shared bicycle users, it is necessary to analyze the factors that influence their travel mode and riding frequency choice and to explore how these factors affect their riding behavior. To analyze the bicycle riding characteristics of college students, this paper processes many factors with unknown correlations by using a factor analysis method based on revealed preference (RP) questionnaire data. Then, taking the significant common factors as explanatory variables, a two-layer nested logit (NL) model combining riding frequency and travel mode is established to study college students' riding behavior. The results suggest that the comprehensive hit rate of the upper and lower levels of the model (riding frequency and travel mode) are, respectively, 76.8% and 83.7%, and the two-layer NL model is applicable. It is also shown that environmental factors (cheap, mixed traffic,signal lights at intersection, and so on) have a significant impact on the choice of travel mode and riding frequency. Also, improving the level of bicycle service can increase the shift from walking to riding. Such findings are meaningful for policy-makers, planners, and others in formulating operational management strategies and policies.
入藏号: WOS:000486877700027
语言: English
文献类型: Article
作者关键词: college students; bicycle sharing; nested logit model; factor analysis method; sensitivity analysis
KeyWords Plus: CHOICE; BIKES
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第 7 条，共 42 条
标题: Modeling of the Relationship Between Speed Limit and Characteristic Speed of Expressway Traffic Flow
作者: Yang, J (Yang, Jie); Xu, JL (Xu, Jinliang); Gao, C (Gao, Chao); Bai, GH (Bai, Guohua); Xie, LF (Xie, Linfang); Li, MH (Li, Menghui)
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摘要: Understanding the relationship between speed limit and characteristic speed of expressway traffic flow is of great significance for formulating a reasonable speed limit scheme and improving highway safety and transportation efficiency. In this study, the speed data of the same traffic flow passing through speed limits of 80, 100, and 120 km/h were continuously collected through a field test. The 85th, 15th, and 50th percentile speeds were considered the characteristic speed parameters of the traffic flow. A regression analysis was performed to establish a relationship between the characteristic speed parameters of the traffic flow and the speed limit. Under a free-flow state, the characteristic speed exhibited a strong linear relationship with the speed limit, where the variation ranges of the 85th and 50th percentile speeds were approximately consistent with that of the speed limit. However, a slight inconsistency was found for the 15th percentile speed, which was approximately half the speed limit increase; under a non-free-flow state, the correlation between the speed limit and the vehicle speed was no longer significant.
入藏号: WOS:000486877700110
语言: English

文献类型: Article
作者关键词: Expressway; speed limit; traffic flow; characteristic speed; linear model
KeyWords Plus: CREDIBILITY; MPH
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第 8 条，共 42 条

标题: Self-reports of workloads and aberrant driving behaviors as predictors of crash rate among taxi drivers: A cross-sectional study in China
作者: Wang, YG (Wang, Yonggang); Zhang, Y (Zhang, Yong); Li, LC (Li, Linchao); Liang, GH (Liang, Guohua)
来源出版物: TRAFFIC INJURY PREVENTION **卷:** 20 **期:** 7 **页:** 738-743 **DOI:** 10.1080/15389588.2019.1650267 **提前访问日期:** AUG 2019 **出版年:** OCT 3 2019
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摘要: Objective: Taxis provide an important mode of public transport in China, but there has been very little in-depth research on the crash involvement propensity of taxi drivers. Thus, this study was conducted to develop a quantitative model for predicting the crash rate of taxi drivers. Methods: A total of 2,391 taxi drivers from 29 companies in 4 Chinese cities

completed a structured and anonymous face-to-face questionnaire reporting their demographic information, workload conditions, aberrant driving behaviors, and crash history within the 2 years prior to the survey. Using the self-reported variables, a negative binomial model was implemented to predict taxi drivers' property damage only (PDO) and personal injury (PI) crash rates and identify the factors contributing to this risk. Results: Descriptive analysis of the survey data revealed that the workload of taxi drivers in China is relatively heavy. Seven significant predictors of PDO and PI crash rates were identified, including crossing red lights, dangerous overtaking, honking at a slow driver, failure to use an indicator lamp, driving while fatigued, stopping in forbidden areas to pick up or drop off a passenger, and driving with one hand. Taxi drivers' average off-duty days per week, aggressive driving behaviors, and preventing another driver from merging had significant effects only on PDO crash rate, and sleep problems were found to be significantly correlated with PI crash rate. Conclusions: To improve the safety of taxi drivers, considerable measures should be strictly implemented, ranging from periodic driver training and safety education to workload reduction, with the cooperation of government agencies and taxi companies. The findings of this study contribute to the design of potentially useful policy initiatives as well as targeted safety promotion programs.

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作者关键词: Taxi drivers; workload conditions; aberrant driving behaviors; crash rate; negative binomial model

KeyWords Plus: SAFETY RISK; PREVALENCE; FATIGUE

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第 9 条，共 42 条
标题: Impact of High-Altitude on Truck's Climbing Speed: Case study in Qinghai-Tibet Plateau Area in China
作者: Lei, T (Lei, Tian); Xu, JL (Xu, Jinliang); Jia, XL (Jia, Xingli); Wei, LY (Wei, Leyu); Tian, L (Tian, Lin)
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摘要: Truck's climbing performance is an important consideration in traffic safety, efficiency, and highway geometric design. With the infrastructure development in high-altitude area in China, more attention needs to be paid on truck's climbing performance in such area. In this article, truck's climbing speed in high-altitude area was examined through field tests on different grade sections at different altitudes. Truck's speed-distance curves were built at different altitudes and the impact of altitude on truck's climbing speed was explored based on the test results. It was shown that, within the altitude range of 3000 similar to 5000m, altitude had an obvious influence on test truck's decelerating and accelerating performance. Truck's speed decreased faster on steep grades and increased slower on gentle grades with the increase of the altitude. Also, the stable speed that test truck could maintain on a certain grade was lower at a higher altitude. In addition, test truck's theoretical speed-distance curves at the sea level were estimated through truck's dynamic model. Compared with the theoretical crawl speed, a negative effect of altitude change (from 0 to the altitude above 3000 m) was found on truck's climbing performance.
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语言: English
文献类型: Article
KeyWords Plus: MODELING OPERATING SPEED; VEHICLE DYNAMICS MODEL; PREDICTION MODELS
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第 10 条，共 42 条

标题: Determinants of injury severity for truck crashes on mountain expressways in China: A case-study with a partial proportional odds model

作者: Wang, YG (Wang, Yonggang); Prato, CG (Prato, Carlo G.)

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摘要: The fast economic growth in China has dramatically increased the number of heavy traffic and the length of the expressway network, with consequent road safety issues emerging in particular in mountainous expressways. This study positions itself at the intersection of these issues by analysis determinants of injury severity for truck crashes on mountainous expressways in China. A sample of 2695 heavy truck crashes occurring on four mountain expressways in Jiangxi and Shaanxi (China) between 2006 and 2015 was analysed to uncover the effect on crash injury severity of geometric, driver, crash, truck and environmental characteristics. Given that the expansion of the expressway network is underway, model findings focused on the effect of geometric characteristics and suggested that road design should have curves that are neither too sharp nor too long, as well as longitudinal gradients not too steep. Also, model findings indicated a need for the toughening of deterrence measures and the bolstering of police enforcement with respect to aberrant driver behaviour (e.g., driving without a valid license, without seat belts, or while intoxicated) and most relevantly overloading of the trucks.

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语言: English
文献类型: Article
作者关键词: Truck road crashes; Mountainous expressways; Injury severity; Driver aberrant behaviour; Police enforcement
KeyWords Plus: PROFESSIONAL DRIVERS; ACCIDENT SEVERITY; IMPACTS; FATIGUE
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第 11 条，共 42 条
标题: Changes of drivers' visual performances when approaching a signalized intersection under different collision avoidance warning conditions
作者: Zhang, YT (Zhang, Yuting); Yan, XD (Yan, Xuedong); Li, XM (Li, Xiaomeng); Wu, JW (Wu, Jiawei)
来源出版物: TRANSPORTATION RESEARCH PART F-TRAFFIC PSYCHOLOGY AND BEHAVIOUR **卷:** 65 **页:** 584-597 **DOI:** 10.1016/j.trf.2017.12.018 **出版年:** AUG 2019
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摘要: Intersections have been recognized as hazard locations with lots of visual information

that drivers need to process. Although the collision avoidance systems (CASs) have been proved to effectively reduce the crash rate and much research on the effectiveness of CASs has been conducted with regard to the driving behaviors, drivers' visual performances under the effects of different collision avoidance warning conditions that were closely related to the effectiveness of CAS have been neglected. In this study, a driving simulator experiment was conducted to evaluate the relationships among drivers' visual performances, drivers' different warning conditions (warning timings x warning content) and driver's gender when they crossed the intersections involved with red-light running (RLR) vehicles. The experimental results showed that warning timings had significant effects on the detection stage and reaction stage. Specifically, drivers could detect the conflicting RLR vehicle most quickly in the warning timings of 4.5 s ahead of a collision. When the warning was released earlier than 5.0 s ahead of a collision, driver tended to take brake action earlier than paying a fixation on a conflicting RLR vehicle. Warning content only had significant effects on drivers' detection stage. Compared to the non-directional warning, the specific directional information could shorten the time spent in detecting the conflicting RLR vehicle. Besides, directional information could increase drivers' average blink duration during the process of collision avoidance. Additionally, the results showed that female drivers were more likely to be involved with RLR collisions, and male drivers could detect the conflicting RLR vehicle more quickly than female drivers. Also, it had been found that later warning timings tended to increase female drivers' blink rate, and non-directional warning tended to increase female drivers' blink rate. These findings could direct warning condition design to improve the effectiveness of collision avoidance systems. (C) 2018 Elsevier Ltd. All rights reserved.

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作者关键词: Collision avoidance system; Warning timings; Warning content; Visual performances; Driving simulator; Red-light running

KeyWords Plus: EYE-MOVEMENTS; GENDER-DIFFERENCES; MENTAL WORKLOAD; BEHAVIOR; SIMULATOR; DISTRACTION; ENVIRONMENT; LOCATION; VEHICLES; IMPACT

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第 12 条，共 42 条
标题: The Formation Mechanism and Influence Factors of Highway Waterfall Ice: A Preliminary Study
作者: Zhou, ZJ (Zhou, Zhijun); Lei, JT (Lei, Jiangtao); Zhu, SS (Zhu, Shanshan); Qiao, SS (Qiao, Susu); Zhang, H (Zhang, Hao)
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摘要: Highway waterfall ice hazards usually happen in cold regions. However, minimal research has addressed this so far due to its multidisciplinary nature. In this study, ground water monitoring tests were conducted for 2.5 years to study the relationship between ground water level changes and waterfall ice hazards. To explore the internal factors that lead to highway waterfall ice, gradation tests, penetration tests, and freezing tests were conducted which revealed that coarse-grained particles can enhance the permeability of aquifers. Further, volume expansion of free water freezing in a closed system is the main reason for pore pressure increasing aquifers in research areas. Furthermore, to understand the formation mechanism of highway waterfall ice further, a mathematical model of saturated coarse-grained soil at the state of phase transition equilibrium was obtained. This indicates that the essence of the aquifers' freezing (coarse-grained soil) in the waterfall ice area is the freezing of closed water. Finally, based on the abovementioned findings, the formation process of waterfall ice is defined as three stages: The drainage obstruction stage, the soil deformation stage, and the groundwater gushing stage,

respectively. This definition can provide significant guidance on further research that focuses on prevention of highway waterfall hazards.

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语言: English

文献类型: Article

作者关键词: highway waterfall ice; ground water; mathematical model; formation mechanism

KeyWords Plus: FROST HEAVE; MODEL; SOIL; TRANSPORT; SUBGRADE; STRENGTH; FIBER

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第 13 条，共 42 条

标题: Evaluating Signalization and Channelization Selections at Intersections Based on an Entropy Method

作者: Shao, Y (Shao, Yang); Han, XY (Han, Xueyan); Wu, H (Wu, Huan); Claudel, CG (Claudel, Christian G.)

来源出版物: ENTROPY 卷: 21 期: 8 文献号: 808 **DOI:** 10.3390/e21080808 出版年: AUG 2019

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摘要: Direct left turns (DLTs) could cause traffic slowdown, delay, stops, and even accidents on intersections, especially on no-median roads. Channelization and signalization can significantly diminish negative impact of DLTs. In China, a total of 56 large and medium-sized cities, including 17 provincial capitals, have adopted vehicle restriction policies due to traffic congestion, vehicle energy conservation and emission reduction, which cause travel inconvenience for citizens. This paper mainly studies signalization and channelization selections at intersections based on an entropy method. Based on the commonly used three evaluation indexes, the number of vehicles, CO emissions and fuel consumption have been added. The entropy evaluation method (EEM) method is innovatively used to objectively calculate the weight of the six indexes, which carry out the optimal traffic volume combinations for intersections of present situation, channelization and signalization. A VISSIM simulation is also used to evaluate the operating status of three conditions. The results show that EEM could help enormously in choosing different methods at a certain intersection. With the EEM, six indexes decrease by 20-70% at most.

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语言: English

文献类型: Article

作者关键词: entropy evaluation method; traffic conflict; VISSIM; vehicle emission; restriction policy

KeyWords Plus: U-TURNS; TRAFFIC FLOW; HEAD-UP; CAPACITY; DESIGN; VEHICLES; NUMBER; SAFETY; MODEL

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标题: Investigation of household private car ownership considering interdependent consumer preference
作者: Wu, N (Wu, Na); Tang, CY (Tang, Chunyan)
来源出版物: PLOS ONE **卷:** 14 **期:** 7 **文献号:** e0219212 **DOI:** 10.1371/journal.pone.0219212 **出版年:** JUL 10 2019
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摘要: People are connected by various social networks, resulting in the interdependence of consumer choice. Therefore, it is very important and realistic to assume choice interdependence in private car ownership modeling. In this paper, we investigate the interdependence of private car ownership choice using a spatial autoregressive binary probit model estimated by the Bayesian Markov chain Monte Carlo (MCMC) method. Constructing the autoregressive matrix demographically shows that the private car ownership choice of a household is dependent on other household choices. Compared with the pure binary probit model estimated by the MCMC method, the spatial autoregressive model achieves a significant improvement both in loglikelihood value and log marginal density value, which are calculated using the importance sampling method of Newton and Raftery, from approximately -202 to approximately -63 and from -208 to -145, respectively. Moreover, the results indicated by the spatial autoregressive probit model suggest that the number of children, the ownership of an apartment or the availability of a parking lot are positively and significantly associated with the private car ownership level. To test the out-of-sample performance of the model, we estimate the model using 600 data points and test it using another 148 data points. The results indicate that the predictive power is greatly improved. Finally, we analyze the augmented parameter and discover that it is associated with the parking variable in addition to the license variable.
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文献类型: Article
KeyWords Plus: DISCRETE-CONTINUOUS MODEL; BUILT ENVIRONMENT; AUTOMOBILE OWNERSHIP; AUTO OWNERSHIP; PROBIT MODEL; CHOICE; DETERMINANTS; SIMULATION; ADOPTION; IMPACTS

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第 15 条，共 42 条

标题: Impacts of gradual automated vehicle penetration on motorway operation: a comprehensive evaluation

作者: Li, D (Li, Duo); Wagner, P (Wagner, Peter)
来源出版物: EUROPEAN TRANSPORT RESEARCH REVIEW **卷:** 11 **期:** 1 **文献号:** 36 **DOI:** 10.1186/s12544-019-0375-3 **出版年:** JUL 9 2019
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摘要: Gradual penetration of automated vehicles (AVs) into current motorway systems will usher the stage of mixed traffic in which AVs will coexist with human driven vehicles. Thus, there is an urgent need to identify the possible impacts of this mixed traffic on motorway

operation. To investigate the potential benefits or losses due to introducing AVs into existing motorway systems, this study conducts a comprehensive evaluation based on simulation using a 5.3km stretch on Auckland Motorway and traffic data provided by New Zealand Traffic Agent (NZTA). We analyze the impacts of different AV shares on mobility, safety, emissions and fuel consumption. The motorway with and without traffic control are tested under four scenarios of traffic conditions, namely, heavily congested traffic (>0.95*capacity), lightly congested traffic (approximate to 0.7*capacity), free-flow traffic (approximate to 0.5*capacity), and future traffic (3*heavily congested traffic volume). The outcomes of the research can provide motorway designers and operators a reasonable range of influences contributed by AV penetration so as to better prepare for AVs' arrival.

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语言: English

文献类型: Article

作者关键词: Automated vehicle; Motorway operation; Micro-simulation

KeyWords Plus: VARIABLE-SPEED-LIMIT; MODEL-PREDICTIVE CONTROL; TRAFFIC FLOW; FRAMEWORK

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第 16 条，共 42 条

标题: Modeling Impacts of Highway Circular Curve Elements on Heavy-Duty Diesel Trucks' CO2 Emissions

作者: Zhang, XD (Zhang, Xiaodong); Xu, JL (Xu, Jinliang); Li, MH (Li, Menghui); Li, QS (Li, Qunshan); Yang, L (Yang, Lan)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH **卷:** 16 **期:** 14 **文献号:** 2514 **DOI:** 10.3390/ijerph16142514 **出版**

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摘要: Heavy-duty trucks contribute a significant component of all transportation in cargo terminals, such as Shaanxi Province, China. The emissions from these vehicles are the primary source of carbon emissions during highway operations. While several studies have attempted to address emission issues by improving traffic operations, a few focused on the relationship between emissions and highway geometric design, especially for heavy-duty trucks. The primary goal of this research was to understand the impact of circular curve on carbon dioxide (CO2) emissions produced by heavy-duty diesel trucks. Firstly, appropriate parameters were specified in MOVES (motor vehicle emission simulator) model according to the geometrical characteristics. Fuel consumption, speed and location data were collected by hiring five skilled drivers on the automotive proving ground located at Chang'an University, Shaanxi Province. The associated carbon emission data were derived from fuel consumption data by applying the IPCC (Intergovernmental Panel on Climate Change) method. After this, the applicability of MOVES model was verified by the field experiment. Moreover, a multiple regression model for CO2 emissions incorporated with roadway segment radius, circular curve length, and initial vehicle speed was established with data generated by the MOVES model. The proposed CO2 emission model was also verified by field experiment with relative error of 6.17%. It was found that CO2 emission had monotone decreasing property with radius increasing, and the minimum radius that influenced diesel CO2 emission was 550 m. The proposed quantitative CO2 emission model can provide a reference for low-carbon highway design, leading to environment-friendly transportation construction.
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PubMed ID: 31337123
语言: English
文献类型: Article
作者关键词: circular curve; CO2 emission; heavy-duty diesel truck; MOVES model
KeyWords Plus: GEOMETRIC DESIGN; VEHICLE; ACCELERATION
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第 17 条，共 42 条
标题: The Effect of Posted Speed Limit on the Dispersion of Traffic Flow Speed
作者: Gao, C (Gao, Chao); Xu, JL (Xu, Jinliang); Li, QS (Li, Qunshan); Yang, J (Yang, Jie)
来源出版物: SUSTAINABILITY **卷:** 11 **期:** 13 **文献号:** 3594 **DOI:** 10.3390/su11133594 **出版年:** JUL 1 2019
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摘要: Speed dispersion is an important indicator to portray the quality of traffic flow and is closely related to the road safety operation level. In order to clarify the influence of posted speed limits on the dispersion of traffic flow speed, three sections with speed limits of 80 km/h, 100 km/h and 120 km/h on the same expressway were selected for observation, and traffic volume, speed and other parameters were collected. The characteristic speeds, such as average speed, V-15 and V-85, were evaluation indicators, where V-15 and V-85 are the speeds of the 15th and 85th percentiles measured at the feature points of the road when the traffic is in a free-flow state and the weather is good. The relationship between different posted speed limit values and the above indicators was analyzed using the statistical analysis software, SPSS. The results show that the speed limit has a high correlation with the average speed of traffic flow, V-15 and V-85 in free-flow state, with the coefficient of determination being as high as 0.84, 0.85 and 0.92, respectively. In the restricted flow state, the factors affecting the driver's driving speed are mainly the decrease in driving freedom caused by the increase of traffic volume rather than the speed limit value. In a free-flow state, when the posted speed limit is increased and the average speed and the V-85 also increased by approximately the same magnitude. The posted speed limit values of 80 km/h, 100 km/h and 120 km/h correspond to the 90, 88 and 97 percentile speeds of the traffic flow, respectively. The higher the speed limit is, the larger the speed difference between V-15 and V-85 becomes. The results of the study are very useful for rationally determining the speed limit scheme under different traffic flows.
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语言: English
文献类型: Article
作者关键词: speed dispersion; posted speed limit; traffic flow; expressway
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标题: Review of Urban Transportation Network Design Problems Based on CiteSpace
作者: Jia, GL (Jia, Guo-Ling); Ma, RG (Ma, Rong-Guo); Hu, ZH (Hu, Zhi-Hua)
来源出版物: MATHEMATICAL PROBLEMS IN ENGINEERING **卷:** 2019 **文献号:** 5735702 **DOI:** 10.1155/2019/5735702 **出版年:** JUN 20 2019
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摘要: This paper provides a comprehensive review of urban transportation network design problems according to CiteSpace, including main problem classifications, mathematical models, and solution methods obtained from CiteSpace clusters. The review attempts to present the systematic picture of urban transportation network design and show the future directions of it.
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语言: English
文献类型: Review
KeyWords Plus: MACROSCOPIC FUNDAMENTAL DIAGRAM; CONVERGENT ALGORITHM; TRAFFIC CONGESTION; RESERVE CAPACITY; TRANSIT SYSTEM; CITY; DEMAND; OPTIMIZATION; MODEL; EQUITY
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第 19 条，共 42 条

标题: Fatigue Properties of Cold-Recycled Emulsified Asphalt Mixtures Fabricated by Different Compaction Methods
作者: Jiang, YJ (Jiang, Yingjun); Lin, HW (Lin, Hongwei); Han, ZC (Han, Zhanchuang); Deng, CQ (Deng, Changqing)
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摘要: This paper focuses on investigating the fatigue properties of cold-recycled emulsified

asphalt mixtures (CEAMs) designed via two different compaction methods. First, two different CEAM compaction procedures were investigated and evaluated, including the modified Marshall compaction method (MMCM) and the vertical vibration testing method (VVTM). Indirect tensile fatigue tests were then performed to research the fatigue lives of CEAMs fabricated via the two methods. Finally, a Weibull distribution was applied to analyze the fatigue test results, and the fatigue equation was constructed. The results indicated that the average mechanical strength ratio between the CEAM samples produced by VVTM and the field core samples was >92%, whereas the average ratio of the specimens shaped by the MMCM was <65%. Compared with MMCM-molded CEAMs, VVTM-fabricated CEAMs showed decreased optimal moisture and emulsified asphalt contents by 11% and 9%, respectively, but exhibited improved moisture stability, anti-cracking performance, and anti-rutting performance by 4%, 12%, and 35%, respectively. The fatigue equations established on the basis of the Weibull distribution could effectively assess the fatigue life of CEAMs. The VVTM-manufactured CEAMs showed good resistance of stress change sensitivity and fatigue failure under different stress ratios. The VVTM-compacted CEAMs demonstrated increased fatigue life by 36% at a stress ratio of 0.45 and by 325% at a repeated load of 0.27 MPa compared with the MMCM-fabricated CEAMs.

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文献类型: Article

作者关键词: reclaimed asphalt pavement; cold-recycled emulsified asphalt mixture; vertical vibration testing method; modified Marshall compaction method; fatigue properties

KeyWords Plus: PERFORMANCE; BEHAVIOR; PAVEMENT; CEMENT; MIX

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第 20 条，共 42 条

标题: Analysis of Factors Affecting Real-Time Ridesharing Vehicle Crash Severity

作者: Zhou, B (Zhou, Bei); Zhang, XF (Zhang, Xinfen); Zhang, SR (Zhang, Shengrui); Li, ZZ (Li, Zongzhi); Liu, X (Liu, Xin)

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摘要: The popular real-time ridesharing service has promoted social and environmental sustainability in various ways. Meanwhile, it also brings some traffic safety concerns. This paper aims to analyze factors affecting real-time ridesharing vehicle crash severity based on the classification and regression tree (CART) model. The Chicago police-reported crash data from January to December 2018 is collected. Crash severity in the original dataset is highly imbalanced: only 60 out of 2624 crashes are severe injury crashes. To fix the data imbalance problem, a hybrid data preprocessing approach which combines the over- and under-sampling is applied. Model results indicate that, by resampling the crash data, the successfully predicted severe crashes are increased from 0 to 40. Besides, the G-mean is increased from 0% to 73%, and the AUC (area under the receiver operating characteristics curve) is increased from 0.73 to 0.82. The classification tree reveals that following variables are the primary indicators of real-time ridesharing vehicle crash severity: pedestrian/pedalcyclist involvement, number of passengers, weather condition, trafficway type, vehicle manufacture year, traffic control device, driver gender, lighting condition, vehicle type, driver age and crash time. The current study could provide some valuable insights for the sustainable development of real-time ridesharing services and urban transportation.

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语言: English

文献类型: Article

作者关键词: real-time ridesharing; crash severity; data imbalance; SMOTE plus ENN; decision tree

KeyWords Plus: INJURY-SEVERITY; HYBRID APPROACH; MODEL; CLASSIFICATION

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第 21 条，共 42 条

标题: A Driver's Physiology Sensor-Based Driving Risk Prediction Method for Lane-Changing Process Using Hidden Markov Model

作者: Li, Y (Li, Yan); Wang, F (Wang, Fan); Ke, H (Ke, Hui); Wang, LL (Wang, Li-li); Xu, CC (Xu, Cheng-cheng)

来源出版物: SENSORS 卷: 19 期: 12 文献号: 2670 **DOI:** 10.3390/s19122670 出版年: JUN 2 2019
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摘要: Lane changing is considered as one of the most dangerous driving behaviors because drivers have to deal with the traffic conflicts on both the current and target lanes. This study aimed to propose a method of predicting the driving risks during the lane-changing process using drivers' physiology measurement data and vehicle dynamic data. All the data used in the proposed model were obtained by portable sensors with the capability of recording data in the actual driving process. A hidden Markov model (HMM) was proposed to link driving risk with drivers' physiology information and vehicle dynamic data. The two-factor indicators were established to evaluate the performances of eye movement, heart rate variability, and vehicle dynamic parameters on driving risk. The standard deviation of normal to normal R-R intervals of the heart rate (SDNN), fixation duration, saccade range, and average speed were then selected as the input of the HMM. The HMM was trained and tested using field-observed

data collected in Xi'an City. The proposed model using the data from the physiology measurement sensor can identify dangerous driving state from normal driving state and predict the transition probability between these two states. The results match the perceptions of the tested drivers with an accuracy rate of 90.67%. The proposed model can be used to develop proactive crash prevention strategies.

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PubMed ID: 31200499

语言: English

文献类型: Article

作者关键词: driving risk prediction; hidden Markov model; physiology measurement sensor; vehicle dynamic data; lane changing

KeyWords Plus: BEHAVIOR; WORKLOAD; FATIGUE; SAFETY; PERFORMANCE; IMPACT

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第 22 条，共 42 条

标题: The impacts of household features on commuting carbon emissions: a case study of Xi'an, China

作者: Lyu, P (Lyu, Pu); Lin, YJ (Lin, Yongjie); Wang, YQ (Wang, Yuanqing)

来源出版物: TRANSPORTATION **卷:** 46 **期:** 3 **页:** 841-857 **DOI:** 10.1007/s11116-017-9829-4 **出版年:** JUN 2019

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摘要: This study contributes to the analysis of the household characteristics and household neighborhood ones affecting the transportation carbon dioxide emissions produced by commuters. This analysis integrated the household commuting measures of the travel mode, frequency, distance and household demographics using datasets from a metropolitan scale survey in the city of Xi'an, China. The results of the tests that used the field data from Xi'an, revealed that a significant positive relationship between commuting emissions and household size, income, and education level. Moreover, there is a significant relationship between the average age in the household and the commuting emissions. The methodology developed in this study measured the regional emissions by incorporating the impacts of the household characteristics and household neighborhood ones on the commuting emissions. A further exploration of the data showed that regional commuting carbon emissions are more likely to have a positive relationship with the mixed urban land use.

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语言: English

文献类型: Article

作者关键词: Commuting emissions; Household carbon emissions; Household characteristics; Land use

KeyWords Plus: GREENHOUSE-GAS EMISSIONS; BUILT ENVIRONMENT; DIOXIDE EMISSIONS; CO2 EMISSIONS; TRAVEL; ASSOCIATIONS; CITIES; ENERGY; SEOUL

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第 23 条，共 42 条

标题: Interpreting risk factors for truck crash severity on mountainous freeways in Jiangxi and Shaanxi, China

作者: Wang, YG (Wang, Yonggang); Luo, Y (Luo, Ye); Chen, FY (Chen, Fayu)

来源出版物: EUROPEAN TRANSPORT RESEARCH REVIEW **卷:** 11 **期:** 1 **文献号:** 26 **DOI:** 10.1186/s12544-019-0366-4 **出版年:** MAY 20 2019
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摘要: The occurrence and severity of truck crashes generally involve complex interactions among factors correlated to driver characteristics, vehicle attributes, roadway geometry and environment conditions. Thus, the elucidation of the significance of these potential contributory factors is critical when developing safety improvement countermeasures. To this end, data from a total of 1175 crashes involving at least one large truck and collected between 2010 and 2015 from two typical freeways in mountainous areas in Jiangxi and Shaanxi (China), were analyzed using a partial proportional odds model to determine the significant risk factors for injury severity of these crashes. Fourteen total explanatory variables, including the age of the driver, seatbelt status, number of vehicle involved, type of transport, freight conditions, brake system status, disregarding speed limit or not, following distance, horizontal roadway alignment, vertical roadway alignment, seasons, day of week, time of crash, and weather were found to significantly affect the severities of the truck crashes. In addition, old drivers, involvement of multiple vehicles, failure to wear seatbelts, overloading, speeding, brake failure and risky following behavior, curve section, seasons (summer, autumn and winter), nighttime period, and adverse weather conditions were also found to significantly increase the likelihood of injury and fatality crashes. Taken together, these findings may serve as a useful guide for developing legislation and technical countermeasures to ensure truck safety on freeways in mountainous regions, particularly in the context of a developing country.

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语言: English
文献类型: Article
作者关键词: Truck crash; Mountainous freeways; Risk factor; Partial proportional odds model
KeyWords Plus: INJURY SEVERITY; AT-FAULT; DRIVERS; SLEEPINESS;

ACCIDENTS; BEHAVIOR; IMPACTS; WORK

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第 24 条，共 42 条

标题: Carbon Emissions and Expressway Traffic Flow Patterns in China

作者: Dong, YP (Dong, Yaping); Xu, JL (Xu, Jinliang); Liu, XL (Liu, Xingliang); Gao, C (Gao, Chao); Ru, H (Ru, Han); Duan, ZH (Duan, Zhihao)

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摘要: Traffic flow patterns severely impact vehicle carbon emissions. A field test was conducted in this study to obtain fuel consumption and traffic volume data under various traffic flow patterns and to explore the relationship between traffic flow patterns and vehicle carbon emissions. Carbon emission data were obtained via the indirect carbon emission accounting method proposed by the Intergovernmental Panel on Climate Change. Carbon emission prediction models for diesel trucks and gasoline passenger cars were established respectively with volume to capacity ratio as an explanatory variable. The results show that

carbon emissions are highest under the congested flow conditions, followed by unstable flow, free flow, and steady flow. The relationship between the volume to capacity ratio and carbon emissions is a cubic curve function. The carbon emissions of trucks and passenger cars with a volume to capacity ratio of 0.4 to 0.5 are relatively small. The proposed carbon emissions models effectively quantify the carbon emissions of vehicles under different traffic flow patterns. The results of this study may provide data to support and a workable reference for expressway operation management and future low-carbon expressway expansion construction projects.

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语言: English

文献类型: Article

作者关键词: carbon emissions; traffic flow patterns; volume to capacity ratio; prediction model; expressway

KeyWords Plus: CO2 EMISSION

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标题: Deviation of Peak Hours for Urban Rail Transit Stations: A Case Study in Xi'an, China
作者: Yu, LJ (Yu, Lijie); Chen, Q (Chen, Quan); Chen, KM (Chen, Kuanmin)
来源出版物: SUSTAINABILITY 卷: 11 期: 10 文献号: 2733 **DOI:** 10.3390/su11102733 出版年: MAY 2 2019
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摘要: The inconsistencies of passenger flow volume between stations' peak hours and cities' peak hours have emerged as a phenomenon in various cities worldwide. Passenger flow forecasting at planning stages can only predict passenger flow volume in city peak hours and for the whole day. For some stations, the highest flow does not occur in the city peak hours, and station scale design is often too small. This study locates the formation mechanism of station peak in which the temporal distribution of the station is the superposition of different temporal distributions of the purpose determined by land-use attributes. Data from 63 stations in Xi'an, China, were then used to present an enlargement coefficient which can change the boarding and alighting volume in city peak hours to a station's own peak hours. This was done by analyzing the inconsistencies of passenger flow volume between the station's peak hours and the city's peak hours. Morning peak deviation coefficient (PDC) and evening PDC were selected as datasets, and stations were classified accordingly. Statistics of land usage for every type of station showed that when the stations were surrounded by developed land, the relationship between the PDC and the commuter travel land proportion was to some extent orderly. More than 90.00% of stations with a proportion of commuter travel land that was more than 0.50 had PDCs under 1.10. All stations with a proportion of commuter travel land that was less than 0.50 had morning PDCs over 1.10. Finally, data from 52 stations in Chongqing, China were used to verify the findings, with the results in Chongqing predominantly corresponding to those in Xi'an.
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语言: English
文献类型: Article
作者关键词: transport planning; urban rail transit stations; peak deviation coefficient; clustering methods
KeyWords Plus: PASSENGER FLOW
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标题: Optimization and Application of Integrated Land Use and Transportation Model in Small- and Medium-Sized Cities in China
作者: Ma, SH (Ma, Shuhong); Zhang, Y (Zhang, Yan); Sun, CX (Sun, Chaoxu)
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摘要: Integrated land use and transportation models are helpful when policy, planning, or environment impacts are being evaluated, but the strengths and limitations in these models must be optimized. To optimize the ITLUP (Integrated Transportation and Land-Use Planning) model and apply it in small- and medium-sized cities in China, this study considered the constraints of land use intensity and introduced two critical indicators (the maximum number of households and maximum employment) to characterize the land capacity and improve the practicality of the model. Then, Monte Carlo simulation analysis was used to analyze the uncertainty factors using the coefficient of variation (C.V) and standardized regression coefficient (SRC). The results suggest that the maximum future employment and households may exceed the land limit and must be adjusted to a new zone, and the model operation simulation was closer to the actual situation of small- and medium-sized cities. The C.V value of the model output showed the increasing trend of the uncertainty of the model output variable over time, especially affected by DRAM model parameters, traffic demand forecasting model parameters and the peak hourly flow ratio. Such findings are meaningful for policymakers, planners, and others when the ITLUP model is used to anticipate the zonal employment and household allocation and to further explore the interaction between land use and transportation.
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语言: English
文献类型: Article
作者关键词: small- and medium-sized cities; integrated land use and transport; ITLUP model; optimization; maximum number of households; maximum employment
KeyWords Plus: URBAN-DEVELOPMENT; MICROSIMULATION

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标题: The relation between working conditions, aberrant driving behaviour and crash propensity among taxi drivers in China
作者: Wang, YG (Wang, Yonggang); Li, LC (Li, Linchao); Prato, CG (Prato, Carlo G.)
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摘要: Although the taxi industry is playing an important role in Chinese everyday life, little attention has been posed towards occupational health issues concerning the taxi drivers' working conditions, driving behaviour and road safety. A cross-sectional survey was administered to 1021 taxi drivers from 21 companies in four Chinese cities and collected information about (i) sociodemographic characteristics, (ii) working conditions, (iii) frequency of daily aberrant driving behaviour, and (iv) involvement in property-damage-only (PDO) and personal injury (PI) crashes over the past two years. A hybrid bivariate model of crash involvement was specified: (i) the hybrid part concerned a latent variable model capturing unobserved traits of the taxi drivers; (ii) the bivariate part modelled jointly both types of crashes while capturing unobserved correlation between error terms. The survey answers paint a gloomy picture in terms of workload, as taxi drivers reported averages of 9.4 working hours per day and 6.7 working days per week that amount on average to about 63.0 working hours per week. Moreover, the estimates of the hybrid bivariate model reveal that

increasing levels of fatigue, reckless behaviour and aggressive behaviour are positively related to a higher propensity of crash involvement. Lastly, the heavy workload is also positively correlated with the higher propensity of crashing, not only directly as a predictor of crash involvement, but also indirectly as a covariate of fatigue and aberrant driving behaviour. The findings from this study provide insights into potential strategies for preventive education and taxi industry management to improve the working conditions and hence reduce fatigue and road risk for the taxi drivers.

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作者关键词: Taxi drivers; Working conditions; Fatigue; Aberrant driving behaviour; Crash propensity; Hybrid bivariate model

KeyWords Plus: PROFESSIONAL DRIVERS; QUESTIONNAIRE SURVEY; RISK; ACCIDENTS; FATIGUE; PREVALENCE; CHOICE; HEALTH; MODEL

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作者: Chen, L (Chen, Lin); Bai, Q (Bai, Qiang)

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摘要: Featured Application

Infrastructure Asset Management is an important and popular research area, especially when the infrastructure networks are expending so quickly. Researchers developed a large number of optimization methods for its decision-making process. While they mainly focus on the individual algorithms and problems, a comprehensive knowledge, given the broad range of optimization methods, is hardly discussed and an analysis and graphical presentation of existing knowledge is necessary. This review is to discuss the current achievements on this subject, share the knowledge, avoid the repeated work, and guide the future research. Abstract Infrastructure assets, serving everyone's daily life, are an essential foundation of any society. Their management faces a wide range of challenges. Hence optimization methods are increasingly applied to assist making management decisions in infrastructure asset management (IAM). A large number of articles apply a broad range of optimization methods in their decision making (DM) and achieve great results. However, they mainly focus on individual methods and a comprehensive knowledge, given the broad range of optimization methods, is hardly discussed. Hence it is valuable to analyze and graphically present the existing knowledge on this subject. This paper, based on a total of 337 articles, provides an overall review of the applications of optimization when making management decisions in IAM, with the intension of enhancing the optimization application and method selection and guiding the future research in this field. More specifically, this paper introduces the application process of optimization when assisting DM in IAM, summarizes the previous application research, and discusses the popular optimization methods applied in DM in IAM. According to the literature review, this paper confirms optimization can effectively assist DM in IAM and a wide range of optimization methods are applicable to assist a variety of DM problems. The recommendations on the applications and selection of optimization methods in the context of IAM are also made to facilitate the applications.

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语言: English

文献类型: Review

作者关键词: decision making; infrastructure asset management; optimization

KeyWords Plus: ROAD MAINTENANCE OPTIMIZATION; LIFE-CYCLE COST; PAVEMENT MAINTENANCE; MULTIOBJECTIVE OPTIMIZATION; JOINT OPTIMIZATION; BUDGET ALLOCATION; SYSTEM; NETWORK; MODEL;

REHABILITATION

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第 29 条，共 42 条

标题: Urban Transit Network Properties Evaluation and Optimization Based on Complex Network Theory

作者: Jia, GL (Jia, Guo-Ling); Ma, RG (Ma, Rong-Guo); Hu, ZH (Hu, Zhi-Hua)

来源出版物: SUSTAINABILITY 卷: 11 期: 7 文献号: 2007 **DOI:** 10.3390/su11072007 出版年: APR 1 2019

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摘要: Urban public transportation contributes greatly to sustainable urban development. An urban public transportation network is a complex system. It is meaningful for theory and practice to analyze the topological structure of an urban public transportation network and explore the spatial structure of an urban transportation network so as to mitigate and prevent traffic congestion and achieve sustainability. By examining the Xi'an bus network, the degree distribution, average path length, aggregation coefficient, and betweenness centrality of the bus station network were computed using models in complex network theory. The results show that the node degrees of the Xi'an bus network are unevenly distributed and present a

polarization diagram with long average path length and high aggregation. A model based on betweenness and its solution method was developed to improve the public transportation network's sustainability and discuss the possibility of optimizing the sustainability by network analyzing methods.

入藏号: WOS:000466551600184

语言: English

文献类型: Article

作者关键词: public transport network; complex network theory; network analysis; logistics management; sustainability

KeyWords Plus: WORLD; DESIGN

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第 30 条，共 42 条

标题: Urban transport carbon dioxide (CO2) emissions by commuters in rapidly developing Cities: The comparative study of Beijing and Xi'an in China

作者: Yang, L (Yang, Liu); Wang, YQ (Wang, Yuanqing); Han, SS (Han, Sunsheng); Liu, YY (Liu, Yuanyuan)

来源出版物: TRANSPORTATION RESEARCH PART D-TRANSPORT AND ENVIRONMENT **卷:** 68 **特刊:** SI **页:** 65-83 **DOI:** 10.1016/j.trd.2017.04.026 **出版年:** MAR 2019

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使用次数 (最近 180 天): 13
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引用的参考文献数: 55
摘要: To understand the changing relationships between commuting CO2 emissions (CCE), travel behavior and urban forms, this paper provides a comparative study between the typical Chinese cities of Beijing (more developed) and Xi'an (rapidly developing). Further, the effects of metro services on reducing CCE were explored, and comparative analysis on CCE between the inner sprawling suburbs and outer suburbs was conducted. It was found that: (i) the increases in CCE are several times larger than the increases in urban size, population, and economic developments; (ii) metro services reducing CCE near metro stations is not statistically significant, maybe because the proportions of car users near the metro stations are similar to the two cities' average levels, which is caused by their higher household income and the longer travel time using the metro; (iii) in Beijing, there are smallest CCE in the outer suburbs due to job-housing balances, short distance and large percentage of non-motorized mode uses while largest CCE in the inner sprawl suburbs due to car trips with long distance. These findings indicate that to cope with the rapidly increasing CCE, more attention should be paid to developing strong industry and real-estate simultaneously; the improvement in the feeder bus and public bicycle systems should also be reinforced to reduce the total travel time of metro users; and satellite cities with job-housing balance are greatly needed. The implications will benefit efforts to reduce CCE and mitigate global climate change, and they also provide empirical evidence and reference values for other global cities. (C) 2017 Elsevier Ltd. All rights reserved.
入藏号: WOS:000466455900007
语言: English
文献类型: Article
作者关键词: Urban sprawl; Travel pattern; Transport CO2 emission by commuters; Beijing; Xi'an; China
KeyWords Plus: GREENHOUSE-GAS EMISSIONS; RESIDENTIAL DENSITY; LAND-USE; TRANSIT; TRAVEL; FORM; CONSUMPTION; IMPACTS; UNCERTAINTY; CONNECTION
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来源出版物页码计数: 19

第 31 条，共 42 条

标题: Simulation-Based Travel Time Reliable Signal Control

作者: Chen, X (Chen, Xiao); Osorio, C (Osorio, Carolina); Santos, BF (Santos, Bruno Filipe)

来源出版物: TRANSPORTATION SCIENCE **卷:** 53 **期:** 2 **页:** 523-544 **DOI:** 10.1287/trsc.2017.0812 **出版年:** MAR-APR 2019

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摘要: This paper addresses a travel time reliable signal control problem. Travel time distributional estimates are obtained from a stochastic microscopic traffic simulator. The estimates are embedded within a simulation-based optimization algorithm. Analytical approximations of the simulated metrics are combined with the simulated data in order to enhance the computational efficiency of the algorithm. The signal control problems are formulated based on the expectation and the standard deviation of travel time metrics. The proposed approach goes beyond the traditional use of first-order simulated information, it addresses a problem that embeds higher-order distributional information. It is used to solve a large-scale signal control problem. The approach addresses these challenging simulation-based optimization problems in a computationally efficient manner. Its performance is compared to that of a traditional simulation-based optimization approach. The proposed method systematically outperforms the traditional approach. Such an approach can be used to inform the design and operations of transportation systems by, for instance, addressing reliable and/or robust formulations of traditional transportation problems.

入藏号: WOS:000465151000012

语言: English

文献类型: Article

作者关键词: simulation-based optimization; travel time reliability; large-scale signal control; metamodel

KeyWords Plus: OPTIMIZATION ALGORITHM; RELIABILITY; VARIABILITY; EQUILIBRIUM; NETWORKS; MODELS

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ISO 来源出版物缩写: Transp. Sci.

来源出版物页码计数: 22

第 32 条，共 42 条

标题: Analysis of Factors Affecting Hit-and-Run and Non-Hit-and-Run in Vehicle-Bicycle Crashes: A Non-Parametric Approach Incorporating Data Imbalance Treatment

作者: Zhou, B (Zhou, Bei); Li, ZZ (Li, Zongzhi); Zhang, SR (Zhang, Shengrui); Zhang, XF (Zhang, Xinfen); Liu, X (Liu, Xin); Ma, QN (Ma, Qiannan)

来源出版物: SUSTAINABILITY 卷: 11 期: 5 文献号: 1327 **DOI:** 10.3390/su11051327 出版年: MAR 1 2019

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摘要: Hit-and-run (HR) crashes refer to crashes involving drivers of the offending vehicle fleeing incident scenes without aiding the possible victims or informing authorities for emergency medical services. This paper aims at identifying significant predictors of HR and

non-hit-and-run (NHR) in vehicle-bicycle crashes based on the classification and regression tree (CART) method. An oversampling technique is applied to deal with the data imbalance problem, where the number of minority instances (HR crash) is much lower than that of the majority instances (NHR crash). The police-reported data within City of Chicago from September 2017 to August 2018 is collected. The G-mean (geometric mean) is used to evaluate the classification performance. Results indicate that, compared with original CART model, the G-mean of CART model incorporating data imbalance treatment is increased from 23% to 61% by 171%. The decision tree reveals that the following five variables play the most important roles in classifying HR and NHR in vehicle-bicycle crashes: Driver age, bicyclist safety equipment, driver action, trafficway type, and gender of drivers. Several countermeasures are recommended accordingly. The current study demonstrates that, by incorporating data imbalance treatment, the CART method could provide much more robust classification results.

入藏号: WOS:000462661000111

语言: English

文献类型: Article

作者关键词: bicyclist; hit-and-run; traffic safety; classification and regression tree; data imbalance

KeyWords Plus: INJURY SEVERITY; CLASSIFICATION; ACCIDENTS; MODEL

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第 33 条，共 42 条

标题: Preparation and performance of conductive gussasphalt concrete

作者: Wang, CH (Wang, Chaohui); Yang, X (Yang, Xue); Li, Q (Li, Qiang); Guo, TT (Guo, Tengteng); Jiang, TT (Jiang, Tingting)

来源出版物: TRANSPORTMETRICA A-TRANSPORT SCIENCE **卷:** 15 **期:** 1 **特刊:** SI **页:** 55-70 **DOI:** 10.1080/23249935.2018.1449913 **出版年:** FEB 7 2019

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摘要: During trial mixing process of conductive gussasphalt (GA) concrete, several technical challenges arise with ice melting on steel bridge deck. In this study, various conductive materials are added to GA concrete in order to prepare mixtures with appropriate constructability, high-temperature stability, and excel conductivity performance. The impacts of conductive material and asphalt concrete type on-field performance are particularly investigated. The ice melting efficiency is evaluated for various combinations of conductive GA concrete materials. Results show that the prepared conductive GA concrete can satisfy satisfactory field performance by increasing the amount of carbon fiber, replacing basalt with functional aggregate, and spraying carbon fiber in the central conductive layer. The best performance is achieved with 0.8% of mixing carbon fiber at the spraying density of 170 g/m(2), while the optimal ice melting efficiency is obtained when carbon fiber is sprayed in the central conductive layer.

入藏号: WOS:000466758100005

语言: English

文献类型: Article

作者关键词: Road engineering; conductive gussasphalt concrete; preparation; road performance; ice melting

KeyWords Plus: ASPHALT CONCRETE

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第 34 条，共 42 条
标题: Association of Carbon Emissions and Circular Curve in Northwestern China
作者: Dong, YP (Dong, Yaping); Xu, JL (Xu, Jinliang); Li, M (Li, Menghui); Jia, XL (Jia, Xingli); Sun, C (Sun, Chao)
来源出版物: SUSTAINABILITY 卷: 11 期: 4 文献号: 1156 **DOI:** 10.3390/su11041156 出版年: FEB 2 2019
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摘要: Carbon emissions, produced by automobile fuel consumption, are termed as the key reason leading to global warming. The highway circular curve constitutes a major factor impacting vehicle carbon emissions. It is deemed quite essential to investigate the association existing between circular curve and carbon emissions. On the basis of the IPCC carbon emission conversion methodology, the current research work put forward a carbon emission conversion methodology suitable for China's diesel status. There are 99 groups' test data of diesel trucks during the trip, which were attained on 23 circular curves in northwestern China. The test road type was key arterial roads having a design speed greater than or equal to 60 km/h, besides having no roundabouts and crossings. Carbon emission data were generated with the use of carbon emission conversion methodologies and fuel consumption data from field tests. As the results suggested, carbon emissions decline with the increase in the radius of circular curve. A carbon emission quantitative model was established with the radius and length of circular curve, coupled with the initial velocity as the key impacting factors. In comparison with carbon emissions under circular curve section and flat section scenarios, the minimum curve radius impacting carbon emissions is 500 m. This research work provided herein a tool for the quantification of carbon emissions and a reference for a low-carbon highway design.
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语言: English
文献类型: Article
作者关键词: low carbon highway; circular curve; carbon emissions; prediction model; minimum radius

KeyWords Plus: HORIZONTAL CURVES; FUEL CONSUMPTION; VEHICLE; MODEL; FOOTPRINT; SPEED

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ISO 来源出版物缩写: Sustainability

第 35 条，共 42 条

标题: Optimization of Passenger Transportation Corridor Mode Supply Structure in Regional Comprehensive Transport Considering Economic Equilibrium

作者: Song, JN (Song, Jingni); Chen, F (Chen, Feng); Wu, QQ (Wu, Qunqi); Liu, WY (Liu, Weiyu); Xue, FY (Xue, Feiyang); Du, K (Du, Kai)

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摘要: Reasonable transportation network layouts are critical for optimizing a comprehensive transport system. With the gradual development of a transportation industry from quantitative expansion to structural optimization, and transformation of various transportation modes from independent operation to integrated development, traditional comprehensive transport planning theories and methods have not adapted. In this paper, a new planning concept is

proposed from the perspective of economic equilibrium with the aim of optimizing a supply structure for a comprehensive transport passenger transportation corridor. An in-depth analysis was conducted of the internal mechanism of the dynamic equilibrium between supply and demand of this corridor, wherein the maximum of the global transportation demand subject customer surplus was taken as a target function, respective interest functions of a demand subject and a supply subject served as constraints to quantitatively optimize the supply structure of the passenger transportation corridor in comprehensive transport, and a Gradient Descent algorithm was designed. The results show that the proposed model better reflects he economic operation mechanism of a passenger transportation market in a comprehensive transport corridor (CTC), and prove that the supply structure of CTC is closely related to passenger flow, travel value distribution, a supply subject's scale rate of return, and travel time. These research results have important academic values in terms of improving passenger transportation corridor structure optimization in region-specific comprehensive transport that conforms to a market economy mechanism. This concept can be extended from single corridor planning to point-to-point and door-to-door transportation supply structure planning, and to comprehensive transport network planning and urban transportation planning without loss of generality.

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语言: English

文献类型: Article

作者关键词: regional comprehensive transport; structure optimization of passenger transportation corridor mode; economic equilibrium; consumer surplus

KeyWords Plus: COMBINED TRIP DISTRIBUTION; ASSIGNMENT; SPLIT

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标题: Classification of Driving Fatigue in High-Altitude Areas
作者: Duan, ZH (Duan, Zhihao); Xu, JL (Xu, Jinliang); Ru, H (Ru, Han); Li, MH (Li, Menghui)
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摘要: Driving fatigue is one of the main causes of traffic accidents. Thus, to prevent traffic accidents and ensure traffic safety, the properties of driving fatigue at the wheel must be determined. The Qinghai-Tibet Plateau in China is known for its high elevation, causing hypoxia, and presence of severely cold areas; all these easily lead to fatigue during driving. This, in turn, seriously affects the traffic safety on the high-altitude highway. Therefore, the factors leading to driving fatigue and the influence of high-altitude on driving fatigue affecting the driver must be further studied. In this study, we classified and quantified driving fatigue according to the driving fatigue degree. We determined three levels of driving fatigues (i.e., mild, moderate, and severe fatigues) to present their influence on drivers. Our study shows that in this high-altitude area, drivers became fatigued within a significantly shorter time.
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语言: English
文献类型: Article
作者关键词: driving fatigue; driving fatigue degree; high altitude areas
KeyWords Plus: DRIVER FATIGUE
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第 37 条，共 42 条
标题: Practical Road-Resistance Functions for Expressway Work Zones in Occupied Lane Conditions
作者: Zhang, C (Zhang, Chi); Qin, JH (Qin, Jihan); Zhang, M (Zhang, Min); Zhang, H (Zhang, Hong); Hou, YD (Hou, Yudi)
来源出版物: SUSTAINABILITY 卷: 11 期: 2 文献号: 382 **DOI:** 10.3390/su11020382 出版年: JAN 2 2019
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摘要: In order to create a practical road-resistance function for work zones under different lane occupation conditions, the expected speed of vehicles was calibrated in the work zone simulation model based on measured data, and simulation models were constructed for the closed half lane and the closed inside lane under different rates of trucks. Based on the statistical theory, the influence of significance of traffic volume and truck ratios for road resistance was analyzed, and a suitable truck ratio was found for the work zone. By using the optimal nonlinear fitting theory, the practical road-resistance function for work zones under different lane occupation conditions was constructed. The results showed that the road resistance is significantly affected by the traffic volume and rate of trucks. Under the same truck ratio, the road resistance linearly increases slowly when the traffic volume is less than the critical traffic volume and rapid increases irregularly when it is greater than the critical traffic volume. Under the same traffic load, the road resistance of the work zone increases with the increase in the rate of trucks, and the difference is not obvious when the traffic volume is less than the critical traffic volume, and increases gradually when it is greater than

the critical traffic volume. Through the goodness of fit test and the homogeneity of variance test, the road-resistance function constructed in this paper has high goodness of fit. The practical road-resistance functions constructed in this study could be used to guide the diversion of the rebuilt/expanded highway to ensure traffic safety. Further, the study provides a theoretical basis for the construction of intelligent highway work zones.

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文献类型: Article

作者关键词: transport safety; work zone; road-resistance function; simulation; VISSIM

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第 38 条，共 42 条

标题: Time-Series Representation and Clustering Approaches for Sharing Bike Usage Mining

作者: Li, D (Li, Duo); Zhao, YF (Zhao, Yifei); Li, Y (Li, Yan)

来源出版物: IEEE ACCESS **卷:** 7 **页:** 177856-177863 **DOI:** 10.1109/ACCESS.2019.2958378 **出版年:** 2019

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摘要: Massive bike-sharing systems (BSS) usage and performance data have been collected for years over various locations. Nevertheless, researchers encountered several challenges while dealing with massive BSS data. The challenges that could be enhanced in the previous studies are 1) reducing high dimensionality and noise of BSS time series data and 2) extracting informative usage patterns out of massive BSS data. This paper extracts patterns and reduce data dimensions of BSS usage by exploring time series representation and clustering of BSS usage data. A reduced dimension allows us to efficiently approximate the BSS usage with reasonable accuracy, which can be further used for bike usage clustering, classification and prediction. We employ a non-data adaptive representation technique -Discrete Wavelet Transform (DWT) to reduce dimensionality and filter out random errors of the raw time series. Time series are clustered using k-means based on similarities measured by Dynamic Time Warping (DTW) and prototypes computed using DTW barycenter averaging (DBA). The proposed approaches are applied on a 3-month bike usage dataset acquired on the BSS of Chicago. The analysis results show that DWT can effectively reduce dimensionality, filter out random errors and reveal the main characteristics of the raw time series. The clustering approach offers the ability to differentiate and discover bike usage patterns across different stations.
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语言: English
文献类型: Article
作者关键词: Sharing bike system; time series data mining; dynamic time warping (DWT); DTW barycenter averaging (DBA)
KeyWords Plus: DIMENSIONALITY REDUCTION; IMPACT; DEMAND; SCHEME; SYSTEM
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第 39 条，共 42 条
标题: Modeling a Risk-Based Dynamic Bus Schedule Problem under No-Notice Evacuation Incorporated with Dynamics of Disaster, Supply, and Demand Conditions
作者: Li, MH (Li, Menghui); Xu, JL (Xu, Jinliang); Wei, LY (Wei, Leyu); Jia, XL (Jia, Xingli); Sun, C (Sun, Chao)
来源出版物: JOURNAL OF ADVANCED TRANSPORTATION **文献号:** 9848603 **DOI:** 10.1155/2019/9848603 **出版年:** 2019
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摘要: Apart from private traffic, the evacuation of transit-dependent population is also an essential component of emergency preparedness, especially under no-notice evacuation scenarios with limit evacuation horizon. In literature, most bus-based evacuation models for no-notice evacuation are established under implicit assumptions of uniform evacuation horizon among different pick-up locations or fixed bus fleet in the evacuation area. These constraints will distance their models from real-world situations, where evacuation horizon is various due to spatial distribution of pick-up locations and fleet size of bus available for allocation will increase over time in no-notice evacuation. This research presents a risk-based bus schedule model which is differentiated from the vehicle routing problem (VRP) and bus evacuation problem (BEP) in literature, including the objective and the time-dependent parameters. A quantified definition of evacuation risk for pick-up location with concerns of disaster dynamics and time-varying supply-demand conditions is proposed in this paper as a criterion for bus allocation, also acting as a reflection of social equity to some extent. A notion of time-evolving disadvantageous evacuation units (DEU) is introduced to represent the pick-up locations selected for bus allocation with limited resource. The binary integer linear programming (BILP) named risk-based bus schedule model incorporated with DEU notion can provide a reference for resource allocation in stage of both evacuation planning and operation for transit-dependent population. The proposed model structure can effectively capture the changes of evacuation risk among pick-up locations over time to realize real-time bus schedule. Numerical experiments are conducted using the transportation network of the city of Xi'an, China, to test the performance of the model. The applicability and comparison of different bus evacuation models are also discussed in this paper. This research provides insights into dealing with disaster dynamics and time-varying supply conditions in realistic bus-based no-notice evacuation operations.
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KeyWords Plus: TRANSPORTATION NETWORKS; SUBWAY
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第 40 条，共 42 条

标题: Research on the Influence of Smartphone Navigation on Driving Behavior Based on Real Vehicle Driving
作者: Dong, CH (Dong, Chen-hao); Ma, RG (Ma, Rong-guo); Zhang, D (Zhang, Dong); Zhang, WT (Zhang, Wan-ting); Wang, FF (Wang, Fang-fang)
来源出版物: MOBILE INFORMATION SYSTEMS 卷: 2019 文献号: 9527890 **DOI:** 10.1155/2019/9527890 出版年: 2019
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摘要: This paper discusses a study of the influence of different positions and modes of smartphone navigation devices on driving behavior based on real vehicle driving. Twenty professional drivers participated in the experiment in free-flowing traffic and good weather conditions. The eye movement and vehicle control data obtained in the experiment were used as

indicators for evaluation. Comparison of the mean, variance, and significance analysis shows that a smartphone navigation device placed on the right side of the car dashboard (position 1) has less impact on driving behavior than when placed above the air conditioning vent (position 2). A smaller angle of view can increase the fixation frequency and the length of time that the driver spends looking out the windshield and reduce the range and time spent in glancing at the navigation device. Using only sound navigation (the audio group in this paper) has the least influence on driving behavior because the driver's visual attention is not transferred inside the vehicle rather than on the road ahead, and the vehicle is operated in the most stable state. These findings have practical significance for reducing the negative influence of smartphone navigation.

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语言: English

文献类型: Article

KeyWords Plus: PERFORMANCE; DISTRACTION

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第 41 条，共 42 条

标题: Vibration Effect Produced by Raised Pavement Markers on the Exit Ramp of an Expressway

作者: Liang, GH (Liang, Guohua); Yin, YJ (Yin, Yujie); Zhang, D (Zhang, Dong); Li, R (Li, Rui); Wu, Y (Wu, Yan); Li, Y (Li, Yu)

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摘要: Driving over raised pavement markers (RPMs) spaced at different spacing, the human body will experience different vibrations. To explore whether RPMs situated at the exit ramp of an expressway induce a good vibration warning effect, this paper determines the spacing of RPMs situated along a deceleration lane and curved ramp. Models of roads, vehicles, and RPMs are first established in the ADAMS software, after which an integrated human-chair model constructed in SolidWorks is imported into ADAMS, and then the complete model is formed so that vibration simulations of different types of vehicle at different spacing and speeds can be carried out. The results show that the vibration warning effects of the spacing proposed by the existing Chinese specifications and this paper are basically between level III and level IV, the driver's subjective feeling is between less comfortable and uncomfortable, and both induce a good vibration warning effect. For a linear deceleration lane, when considering traffic safety, a spacing of 3 m is recommended; when considering the economy, a spacing of 6 m is recommended. For a curved deceleration lane and curved ramp, according to the actual curve radius, the spacing of RPMs can refer to the spacing recommended in the paper. In addition, the vibration warning effect for cars and semi-trailer trucks initially increases with an increase in the speed; then, after reaching a certain peak speed, the effect decreases with an increase in the speed, and finally, it tends to become gentle at speeds exceeding 100 km/h. The vibration warning effect for a semi-trailer truck is better than that for a car under the same spacing and speed.
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文献类型: Article
KeyWords Plus: BIOMECHANICAL MODEL
地址: [Liang, Guohua; Yin, Yujie; Zhang, Dong; Li, Rui; Li, Yu] Changan Univ, Sch Highway, Xian 710064, Shaanxi, Peoples R China.
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第 42 条，共 42 条
标题: A model for phased evacuations for disasters with spatio-temporal randomness
作者: Li, MH (Li, Menghui); Xu, JL (Xu, Jinliang); Li, J (Li, Jin); Liu, XL (Liu, Xingliang); Ru, H (Ru, Han); Sun, C (Sun, Chao)
来源出版物: INTERNATIONAL JOURNAL OF GEOGRAPHICAL INFORMATION SCIENCE **卷:** 33 **期:** 5 **页:** 922-944 **DOI:** 10.1080/13658816.2018.1564315 **出版年:** 2019
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摘要: This research presents an operable zoning approach for phased evacuations adapted to disasters with spatio-temporal randomness. As a criterion for prioritizing evacuation order, evacuation risk is formulated by taking into consideration the estimated residual evacuation horizon associated with the characteristics of the disaster, the estimated time-dependent capacities of outbound lanes related to network supply, and the time-dependent evacuation demand of an evacuation unit. The modeling of the subzone determined for phased evacuation is based on rescue demand, the characteristics of the disaster, and network supply, and is labeled as a high-risk evacuation zone (HEZ). The range of HEZ features a time-evolving pattern in accordance with phased evacuation. The zone partition paradigm can be seamlessly applied to different types of disasters, especially those with high spatio-temporal randomness. It also provides a generalizable approach for subzone partitioning in phased evacuation by minimizing evacuation risk. The proposed approach is examined on numerical experiments through the road network of Xi'an, China, the results of which highlight its strength in increased adaptability to the dynamics of disaster impact and improved performance in evacuation operation.
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语言: English
文献类型: Article
作者关键词: Disaster planning; spatio-temporal randomness; phased evacuation; high-risk evacuation zone (HEZ)
KeyWords Plus: RISK
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经济与管理学院

第 1 条，共 42 条

标题: A Study on the Differences in Driving Skills of Chinese Bus and Taxi Drivers
作者: Zhang, ZB (Zhang, Zuobo); Zhang, XX (Zhang, Xuxin); Ji, NY (Ji, Nuoya); Lin, SS (Lin, Shanshan); Wang, K (Wang, Kun); Ma, TS (Ma, Tianshan); Zhu, WY (Zhu, Wenying)
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摘要: Professional drivers constitute an important group of drivers who shoulder the responsibility of safely transporting passengers and cargo. Bus drivers and taxi drivers are an important part of the urban public transport system, and their driving safety affects road

traffic safety. Therefore, the purpose of this paper is to explore the differences between bus drivers and taxi drivers in their driving behaviors and driving skills and to predict their traffic accident involvement based on these behaviors and skills. We conducted a field survey of 274 bus drivers and 178 taxi drivers in Hefei, China. The results revealed significant differences between bus drivers and taxi drivers in terms of violations, lack of concentration and technical driving skills. Aggression and violations had significant predictive effects on bus drivers' traffic accident involvement, and memory lapses and a lack of safety consciousness had significant predictive effects on taxi drivers' accident involvement.

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文献类型: Article

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第 2 条，共 42 条

标题: A successful delivery process of green buildings: The project owners' view, motivation and commitment

作者: Zhang, JX (Zhang, Jingxiao); Li, H (Li, Hui); Olanipekun, AO (Olanipekun, Ayokunle Olubunmi); Bai, L (Bai, Li)

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摘要: The project owners are at the centre of sustainability decisions to drive the implementation of sustainable building features in the construction industry. Despite this, the existing studies on the successful delivery of green buildings have only focused on the views of other construction project participants such as Architects and Contractors, while project owners are left out. To fill this gap, this study developed a conceptual framework of the synergy between owners' motivation and commitment towards successful delivery of green buildings. The framework was empirically tested by exploring the views of 10 purposively selected project owners in the Australian construction industry. The findings revealed that while project owners' motivation increases their commitment towards successful delivery of green building projects, the intrinsic type of project owners' motivation is more effective than the extrinsic type. The extrinsic type of motivation is less effective due to the lack of harmonization in the existing incentive policies and programs for driving green building development in the Australian construction industry. The study concluded that, similar to other construction project participants, project owners have specific roles in the area of sustainability performance towards the successful delivery of green building projects. By implication, this study tinkers the Australian government to revisit the policy landscape for enhancing green building practices. Additionally, this study has demonstrated the need for active participation of project owners in the delivery of green building projects, and shown how the active participation of project owners can be enhanced through motivation in the construction industry. (C) 2019 Elsevier Ltd. All rights reserved.

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作者关键词: Conceptual framework; Construction industry; Green building; Project delivery; Project owners; Sustainability
KeyWords Plus: HIGH-PERFORMANCE BUILDINGS; EXTRINSIC MOTIVATION; DESIGN; MANAGEMENT; SUSTAINABILITY; EXPLORATION; INDICATORS; DRIVERS; MODEL; FIRMS

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第 3 条，共 42 条
标题: A bi-objective model for location planning of electric vehicle charging stations with GPS trajectory data
作者: Bai, X (Bai, Xue); Chin, KS (Chin, Kwai-Sang); Zhou, ZL (Zhou, Zhili)
来源出版物: COMPUTERS & INDUSTRIAL ENGINEERING **卷:** 128 **页:** 591-604 **DOI:** 10.1016/j.cie.2019.01.008 **出版年:** FEB 2019
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摘要: The construction of charging stations is a crucial factor in promoting electric vehicles (EV). It is necessary to construct EV charging stations in advance to encourage drivers to prefer EVs. This paper addresses the EV charging stations location problem in a city with low EV penetration rate. We divide the city into a grid with several same cells. The potential charging demand of each cell is estimated with the use of GPS trajectory data from thousands of traveling vehicles in the network. We present a cell-based model to decide locations, capacity options, and service types for EV charging stations that can cover all potential charging demand. The problem is formulated as a bi-objective mixed-integer mathematical model, with one objective related to minimizing cost and the other related to maximizing service quality. To solve it, we propose a hybrid evolutionary algorithm that combines the non-dominated sorting genetic algorithm-II (NSGA-II) with linear programming and

neighborhood search. We conduct computational experiments on randomly generated instances to evaluate the performance of the proposed hybrid NSGA-II. Finally, we present a case study designing an EV charging station network for Shenzhen, China with real GPS trajectory data. We also offer some management insights of EV charging stations construction based on sensitivity analysis.

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语言: English

文献类型: Article

作者关键词: Electric vehicles; Charging infrastructure location; Bi-objective optimization; Bi-objective Evolutionary algorithm; GPS trajectory data

KeyWords Plus: EVOLUTIONARY ALGORITHMS; NETWORK

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第 4 条，共 42 条

标题: Dynamics and scenarios of carbon emissions in China's construction industry

作者: Du, Q (Du, Qiang); Shao, L (Shao, Long); Zhou, J (Zhou, Jie); Huang, N (Huang, Ning); Bao, TN (Bao, Tana); Hao, CC (Hao, Chanchan)

来源出版物: SUSTAINABLE CITIES AND SOCIETY **卷:** 48 **文献号:** UNSP 101556 **DOI:** 10.1016/j.scs.2019.101556 **出版年:** JUL 2019

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摘要: Given the major contribution of the construction industry to carbon emissions in China, scientific prediction of carbon emissions in China's construction industry is important for creating carbon reduction policies, and examining whether China can achieve its 2020 carbon intensity target in this sector. This paper investigates the influence of different economic growth rates and different carbon reduction technology policy factors on carbon emissions, and carbon intensity of GDP by a system dynamics method. The results show that carbon emissions are mainly determined by indirect emissions and increase with an increase in industrial GDP. A higher economic growth rate will lead to more carbon emissions, whereas the carbon intensity will decrease with an increase in economic growth rate. Promoting carbon reduction technology development can mitigate carbon emissions and intensity. We assume a conservative rate of economic growth, a 2% reduction relative to the base scenario level; meanwhile, the impact of carbon reduction policy on the decrease in the carbon emission factor is assumed to be 5%. Carbon emissions are lowest under the two assumptions. In all scenarios, the 40-45% reduction in carbon intensity level of 2005 is accomplished. Policies encouraging low-carbon technology would help achieve the objectives of carbon mitigation.
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语言: English
文献类型: Article
作者关键词: Carbon emissions; Construction industry; System dynamics; Scenario analysis
KeyWords Plus: SYSTEM DYNAMICS; ENERGY-CONSUMPTION; DISTRIBUTIONAL IMPACTS; INTENSITY TARGET; CO2 EMISSIONS; POLICY; MODEL; ACHIEVE; ALTERNATIVES; EFFICIENCY
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第 5 条，共 42 条
标题: Relationship of carbon emissions and economic growth in China's construction industry
作者: Du, Q (Du, Qiang); Zhou, J (Zhou, Jie); Pan, T (Pan, Ting); Sun, Q (Sun, Qiang); Wu, M (Wu, Min)
来源出版物: JOURNAL OF CLEANER PRODUCTION **卷:** 220 **页:** 99-109 **DOI:** 10.1016/j.jclepro.2019.02.123 **出版年:** MAY 20 2019
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摘要: Coordinating the dilemma of economic development and reducing carbon emissions is of great significance to reaching China's energy-saving and emission-reduction targets. This paper investigates the decoupling relationship between economic growth and carbon emissions from the construction industry of China's 30 provinces, and uses the standard deviational ellipse method to explore the spatial evolution of carbon emissions and the economy. The results indicate that the economic development levels of most provinces were positively correlated with carbon emissions. The spatial differences in the decoupling state of provincial construction industry are significant, and the decoupling states of the same type exhibited a certain spatial aggregation phenomenon. Furthermore, the spatial distribution of the output value and carbon emissions exhibited a northeast-southwest pattern. The weighted mean centers of both were located in the east and moved towards the northwestern region. These results may provide a basis for assessing regional construction carbon emissions and formulating strategies for the coordinated development of low carbon emissions in the construction industry. (C) 2019 Elsevier Ltd. All rights reserved.
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语言: English
文献类型: Article
作者关键词: Carbon emissions; Construction industry; Decoupling analysis; Spatiotemporal analysis; Standard deviational ellipse
KeyWords Plus: CO2 EMISSIONS; ENERGY-CONSUMPTION; DECOUPLING ANALYSIS; EMPIRICAL-ANALYSIS; DIOXIDE EMISSIONS; PANEL-DATA; DECOMPOSITION; INTENSITY; INDICATORS; LINKAGE
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第 6 条，共 42 条

标题: Rebound effect of energy efficiency in China's construction industry: a general equilibrium analysis
作者: Du, Q (Du, Qiang); Li, Z (Li, Zhe); Li, Y (Li, Yi); Bai, LB (Bai, Libiao); Li, JT (Li, Jingtao); Han, X (Han, Xiao)
来源出版物: ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH **卷:** 26 **期:** 12 **特刊:** SI **页:** 12217-12226 **DOI:** 10.1007/s11356-019-04612-5 **出版年:** APR 2019
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摘要: China has set ambitious targets to reduce its carbon intensity by 2020. Improved energy efficiency is an important strategy to achieve this goal. However, the rebound effect may act as a major obstacle to fully realizing the potential for energy savings. As one of three major energy consumption sectors in China, the construction industry is vital to reducing carbon emissions. This paper established a static computable general equilibrium (CGE) model to study the rebound effect of different energy sources used in the construction industry. The main energy sources used in the construction industry are coal, oil, natural gas, and electricity, and the conclusions show that the largest rebound effect was found for improvements in natural gas efficiency, with an average of 99.20%, while the lowest was for improvements in electricity efficiency, with an average of 83.47%. Moreover, the rebound effect of the primary energy sources (coal, oil, natural gas) was greater than the rebound

effect of the secondary energy source (electricity). Our conclusions indicate that improving the energy efficiency in the construction industry will have a positive impact on GDP and on the mitigation of carbon emissions, and the presence of the rebound effect is significant, especially with regard to electricity sources. The implications of the results are that policymakers should primarily focus on improving the efficiency of electricity. In addition, this paper suggests that the rebound effect can be reduced by removing fossil fuel subsidies and imposing a carbon tax.

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作者关键词: Rebound effect; Construction industry; Energy efficiency; CGE model
KeyWords Plus: CARBON EMISSIONS; US HOUSEHOLDS; TRANSPORT; ECONOMY; DECOMPOSITION; CONSERVATION; CONSUMPTION; DEMAND
地址: [Du, Qiang; Li, Zhe; Li, Yi; Bai, Libiao; Li, Jingtao; Han, Xiao] Changan Univ, Sch Econ & Management, Xian 710064, Shaanxi, Peoples R China.
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第 7 条，共 42 条

标题: Benefit Allocation in the Construction Supply Chain Considering Carbon Emissions
作者: Du, Q (Du, Qiang); Huang, YD (Huang, Youdan); Xu, YD (Xu, Yadan); Bai, LB (Bai, Libiao); Bao, TN (Bao, Tana); Wang, HL (Wang, Hailing)
来源出版物: POLISH JOURNAL OF ENVIRONMENTAL STUDIES **卷:** 28 **期:** 5 **页:** 3697-3709 **DOI:** 10.15244/pjoes/94995 **出版年:** 2019

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摘要: The construction industry has played an important role in reducing carbon emissions. Various policies have been implemented to stimulate construction enterprises to reduce carbon emissions, but the effects of emission reduction are not obvious, for they do not directly benefit the enterprises. This paper employs a modified Shapley value method to study benefit allocation in a construction supply chain considering carbon emissions. Four correction factors are proposed for modifying the initial allocation, namely the contribution rate of inputs, the risk-sharing coefficient, the degree of cooperation and the contribution rate of carbon emissions. We analyze carbon emissions based on an illustrative example of a concrete supply chain consisting of a cement manufacturer, a concrete manufacturer and a construction enterprise, and present our findings. First, the enterprises intend to cooperate to achieve the greatest benefit, and second, the benefit allocation is greatly affected by carbon emissions. Participants that produce more carbon emissions have higher carbon tax costs, which reduce profits. Further suggestions are also presented, which may help enterprises reduce carbon emissions. And policy makers should arrive at a suitable level of carbon tax to promote the smooth progress of projects and to improve the emission reduction effect.
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语言: English
文献类型: Article
作者关键词: modified Shapley value; construction supply chain; carbon emissions; benefit allocation
KeyWords Plus: GREENHOUSE-GAS EMISSIONS; DIOXIDE EMISSIONS; CO2 EMISSIONS; PERFORMANCE; BUILDINGS; DECISIONS; SINGLE; MODEL; GAME; TAX
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第 8 条，共 42 条
标题: Evolutionary Game Analysis on Knowledge-Sharing Behavior in the Construction Supply Chain
作者: Hao, CC (Hao, Chanchan); Du, Q (Du, Qiang); Huang, YD (Huang, Youdan); Shao, L (Shao, Long); Yan, YQ (Yan, Yunqing)
来源出版物: SUSTAINABILITY **卷:** 11 **期:** 19 **文献号:** 5319 **DOI:** 10.3390/su11195319 **出版年:** OCT 1 2019
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摘要: With the increasingly fierce global competition, supply chain members have to collaborate to respond to constant changes. Efficient knowledge sharing is the basis for the collaborative operation of the supply chain. Combined with evolutionary game theory, this paper studies the evolution path and stable strategies of knowledge-sharing behavior between construction supply chain enterprises, analyzing the factors that influence the establishment of a knowledge-sharing alliance. A numerical simulation is conducted to verify theoretical results and the effects of parameter adjustments on behavioral evolution. The results indicate that under different income relationships, knowledge-sharing behavior in construction supply chains presents different evolutionary trajectories. In addition, the probability of accepting the sharing strategy is positively correlated with the penalty coefficient, incentive coefficient, trust level, and synergy coefficient and negatively correlated with cost. This study provides a new perspective and theoretical guidance for establishing stable knowledge collaboration between enterprises and promoting the sustainable development of the construction supply chain.
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作者关键词: evolutionary game; enterprise collaboration; knowledge sharing; construction supply chain
KeyWords Plus: COLLABORATION; MANAGEMENT; DYNAMICS; MAP
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标题: Cost-benefit associations in consumer inventory problem with uncertain benefit

作者: He, HN (He, Haonan); Wang, SY (Wang, Shanyong)

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摘要: Newsvendor problems always describe a situation in which the vendor needs to predict the demand by a buyer when a constant unit profit is predetermined. However, sometimes, the vendor can effectively affect the demand as well as the unit profit, that is, when he is also the buyer simultaneously. Should he purchase more or less in advance when both the demand and unit benefit are uncertain? In this paper, we study how the vendor/buyer (consumer hereafter) would make this inventory decision when the unit profit is uncertain. We first analyze the evaluating process of consumers by conducting a mathematical model to contribute to the understanding of how the cost-benefit association affects consumer inventory decisions. Consumers would experience an immediate pain of payment (cost) at the order time, which is associated to thoughts of the uncertain pleasure (benefit) such payment may provide at the

consumption time. The result shows the cost-benefit association might encourage consumers to either over-or underestimate the pain of paying and thereby take economically sub-optimal decisions. Based on this finding, we conduct three laboratory experiments to analyze the parameters in our model. Contrary to the existing literature, we find that the demand uncertainty may enhance consumer inventory decisions. Specifically, when the benefit uncertainty is really high, a strong cost-to-benefit link caused by the small probability of a great outcome would prevail against a weak benefit-to-cost link, leading to more deviation from the theoretical optimal quantity. Interestingly, we also show that changes to the benefits can lead to more deviation in order quantity, that is, a direct effect of benefit and an indirect impact on demand would jointly make changes to the benefits more effective than changes to the cost. Our finding has important implications on how firms should set prices and inventories of seasonal goods and how much money should invest in promoting pre-purchase behaviors (e.g., store cards).

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文献类型: Article

作者关键词: Consumer inventory decision; Cost-benefit associations; Newsvendor problem; Benefit uncertainty; Laboratory experiments

KeyWords Plus: NEWSVENDOR PROBLEM; DEMAND UNCERTAINTY; EXPERIENTIAL VALUE; MODEL; PROMOTION; SERVICE; RISK; BIAS

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第 10 条，共 42 条

标题: Dynamic pricing model for cruising taxicab based on system dynamics

作者: Jin, YM (Jin, Yu-Ming); Ye, XF (Ye, Xiao-Fei); Liu, WL (Liu, Wen-Li); Wang, T

(Wang, Tao); Wang, H (Wang, Haizhong)

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摘要: The cruising taxi industry has been greatly impacted by the development of the ride-hailing taxi services like the Didi and Uber. The service orders of cruising taxis fell 35% or more. To intervene the conflicts between the cruising and ride-hailing taxis, system dynamics model of cruising taxicab price was proposed by considering the competitive relationships between online ride-hailing and cruising taxis. The proposed model was calibrated and validated by the taxi operational data in Ningbo. Simulation experiments were designed to explore the impact of the cruising taxi price changes on the balance of market supply and demand. Simulations were divided into two scenarios: one was under the different levels of supply and demand at peak and low peak; the other was under the different proportions of ride-hailing taxi. The results indicate that (1) the market supply and demand are close to equilibrium during peak hours when the price increases by (sic)0.6 per kilometer. The increased price can reduce the peak demand level effectively and also increase the total earning of cruising taxis; (2) when the service order ratio of cruising taxis to ride-hailing taxis accounts for about 10:4.5 and 10:8, the price increases by (sic)0.6 per kilometer and decreases by (sic)0.4 per kilometer to achieve the equilibrium of demand and supply, respectively. That is, when the cruising taxis have an advantage over the ride-hailing taxis, the price of cruising taxis should be raised to gain more benefits. Instead, the cruising taxis price should be decreased to improve their competitiveness.

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语言: English

文献类型: Article

作者关键词: Traffic engineering; cruising taxicab; online ride-hailing taxi; taxi price; dynamics system theory

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第 11 条，共 42 条
标题: Knowledge Sharing Willingness and Leakage Risk: An Evolutional Game Model
作者: Li, Q (Li, Qian); Kang, YF (Kang, Yuanfei)
来源出版物: SUSTAINABILITY **卷:** 11 **期:** 3 **文献号:** 596 **DOI:** 10.3390/su11030596 **出版年:** FEB 1 2019
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摘要: Prior research of knowledge sharing between firms mainly focuses on enabling factors, such as benefits resulting from knowledge sharing, leading to an overlook at barriers. Guided by transaction cost economics and social exchange theory, our study constructed an evolutional game model to analyse the dynamic evolution process of the firm's knowledge sharing behaviour in a setting of supply chain networks. Using a simulation in our game model, we firstly reveal how a long-term strategy for supply chain partners towards knowledge sharing is determined through reaching an equilibrium between enabling factors (revenue gained in various forms) and impeding factors (knowledge leakage) in a dynamic process. Secondly, our analysis demonstrates that the competition or rivalry side of the co-opetition relationship acts as the major barrier for knowledge sharing due to the sharer's concern of knowledge leakage. Thirdly, our model has identified knowledge relevancy as the inherent property of knowledge and the firm' ability of knowledge inference as two important factors influencing knowledge leakage.
入藏号: WOS:000458929500041
语言: English
文献类型: Article
作者关键词: knowledge sharing willingness; knowledge leakage; evolutionary game model;

supply chain relationship

KeyWords Plus: TRANSACTION-COST ECONOMICS; RESEARCH-AND-DEVELOPMENT; COMPETITIVE ADVANTAGE; TRUST; MANAGEMENT; STRATEGIES; IMPACT; CAPABILITIES; ALLIANCES; NETWORKS

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第 12 条，共 42 条

标题: Relationship between the development and CO2 emissions of transport sector in China

作者: Li, Y (Li, Yi); Du, Q (Du, Qiang); Lu, XR (Lu, Xinran); Wu, J (Wu, Jiao); Han, X (Han, Xiao)

来源出版物: TRANSPORTATION RESEARCH PART D-TRANSPORT AND ENVIRONMENT **卷:** 74 **页:** 1-14 **DOI:** 10.1016/j.trd.2019.07.011 **出版年:** SEP 2019

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摘要: The transport sector imposes enormous challenges for energy consumption and CO2 emission reduction. Using data from 30 provinces in China, this paper adopted the Tapio decoupling index to examine the relationship between the development of the transport sector and its CO2 emissions from provincial perspective. Additionally, we employed the logarithmic mean divisia index method to explore the effect of several factors on the state of

decoupling. The results showed that the under-developed provinces were more likely to present a weak decoupling state than the developed and coastal provinces. Income level was the major influential factor limiting the development of decoupling in the transport sector. The population scale had a very small negative role in the development of decoupling. Moreover, the effects of CO2 emissions efficiency, transport intensity and industry structure varied across provinces. By offering a provincial perspective on decoupling states and its driving factors, this study can provide a reference for governments in proposing carbon-reduction policies and promoting low carbon development of the transport sector.

入藏号: WOS:000486359000001

语言: English

文献类型: Article

作者关键词: CO2 emissions; Transport sector; Decoupling state; LMDI; Influencing factor

KeyWords Plus: CARBON-DIOXIDE EMISSIONS; ENERGY-CONSUMPTION; DECOMPOSITION ANALYSIS; REGIONAL DISPARITY; ECONOMIC-GROWTH; DRIVING FORCES; TRADE OPENNESS; LMDI; ANALYZE; REDUCTION

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第 13 条，共 42 条

标题: Hierarchical evaluation algorithm of logistics carrying capacity based on transfer learning in multimedia environment

作者: Li, ZL (Li, Zhaolei); Zhang, YQ (Zhang, Yaqi)

来源出版物: MULTIMEDIA TOOLS AND APPLICATIONS **卷:** 78 **期:** 4 **页:** 4481-4501 **DOI:** 10.1007/s11042-018-6000-y **出版年:** FEB 2019

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摘要: In order to measure and enhance the carrying capacity of regional logistics system scientifically and give full play to the efficiency of regional logistics system, based on the perspective of sustainable development, this paper analyzes the network topology structure of regional logistics system. Combining the component elements and operation flow of regional logistics system, we take link line, operation capacity and energy environment as constraint conditions, and construct the measurement model of regional logistics system carrying capacity. The integrated management of logistics requires systematic integration of various modes of transportation, such as highway transportation, water transportation, rail transportation and air transportation, as well as the network of key nodes and their network. Therefore, we need to solve the different transportation models and the nodal carrying capacity calculation methods that constitute the logistics system. Therefore, this paper analyzes the connotation, various transportation mode and port capacity related to the concept of research ideas, research tools and methods, the related calculation formula, traffic flow as the main line to construct different modes of transport carrying capacity between the inner link, and the bearing capacity formula of each transport mode into a unified unit, the transportation mode of coordinated development that is the basis of the overall optimization and decision of logistics system.
入藏号: WOS:000463917200030
语言: English
文献类型: Article
作者关键词: Multimedia environment; Transfer learning; Logistics carrying capacity; Network capability; Hierarchical evaluation; Algorithm
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第 14 条，共 42 条

标题: Design and Freight Corridor-Fleet Size Choice in Collaborative Intermodal Transportation Network Considering Economies of Scale

作者: Liu, D (Liu, Dan); Deng, ZH (Deng, Zhenghong); Sun, QP (Sun, Qipeng); Wang, Y (Wang, Yong); Wang, YH (Wang, Yinhai)

来源出版物: SUSTAINABILITY 卷: 11 期: 4 文献号: 990 **DOI:** 10.3390/su11040990 出版年: FEB 2 2019

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摘要: Decentralized freight decision has been proved to be one of the inhibitors to achieve a sustainable transport network. One important method also a key challenge is to determine how to coordinate and consolidate the transportation flow to get the best logistics performance. This study presents an intermodal transportation network considering freight consolidation through freight forwarders' cooperation. We formulate the problem as a minimum intermodal transport cost model, which is a nonlinear, nonconvex and discontinuous function that involves volume economies of scale, distance economies of scale and vehicle size economies of scale. A hybrid genetic algorithm (GA) and particle swarm optimization (PSO) algorithm in combination with a batch strategy are used to solve the problem. Five different transport demand scenarios are tested on a real case on "China Railway Express" (Crexpress). The choices of reasonably corridor and fleet size combination are provided.

入藏号: WOS:000460819100050

语言: English

文献类型: Article

作者关键词: collaborative intermodal transportation network; tactical planning; batch strategy; genetic algorithm and particle swarm optimization algorithm; economies of scale

KeyWords Plus: CARRIER COLLABORATION; LOGISTICS NETWORK; DECISION-SUPPORT; ALLOCATION; ALLIANCES; DISTANCE; MODELS; TIME

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第 15 条，共 42 条

标题: Multi-stakeholders' assessment of bike sharing service quality based on DEMATEL-VIKOR method

作者: Ma, F (Ma, Fei); Shi, WJ (Shi, Wenjing); Yuen, KF (Yuen, Kum Fai); Sun, QP (Sun, Qipeng); Guo, YR (Guo, Yanru)

来源出版物: INTERNATIONAL JOURNAL OF LOGISTICS-RESEARCH AND APPLICATIONS **卷:** 22 **期:** 5 **特刊:** SI **页:** 449-472 **DOI:** 10.1080/13675567.2019.1568401 **出版年:** SEP 3 2019
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摘要: Bike sharing is a sustainable mode of urban transportation. Assessing the perceived service quality is essential to improve the development of bike sharing. Most of the existing research evaluates the service quality of bike sharing only from the perspective of its users. This study assesses the perceived quality gap among four different stakeholders including

government regulators, platform operators, bike association and users. First, an evaluation criteria system consisting of sixteen criteria obtained from the five dimensions of tangibles, reliability, responsiveness, assurance and empathy is constructed based on a revised service performance model. Thereafter, a hybrid multi-criteria decision-making model that combines Decision-Making Trial and Evaluation Laboratory (DEMATEL) with VIsekriterijumska Optimizacija I Kompromisno Resenje (VIKOR) is proposed. Then, the model is applied to evaluate the service quality of bike sharing in Xi'an City. Finally, some useful suggestions are given to improve the bike sharing service quality from the perspective of multi-stakeholders.

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语言: English

文献类型: Article

作者关键词: Bike sharing; service quality; multi-stakeholders; DEMATEL; VIKOR

KeyWords Plus: MULTICRITERIA DECISION-MAKING; SUSTAINABLE DEVELOPMENT; FUZZY DEMATEL; MODEL; SYSTEMS; SATISFACTION; PERCEPTIONS; TRANSPORT; ADOPTION; TOPSIS

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第 16 条，共 42 条

标题: The Evolution of the Spatial Association Effect of Carbon Emissions in Transportation: A Social Network Perspective

作者: Ma, F (Ma, Fei); Wang, YX (Wang, Yixuan); Yuen, KF (Yuen, Kum Fai); Wang, WL

(Wang, Wenlin); Li, XD (Li, Xiaodan); Liang, Y (Liang, Yuan)

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摘要: The association effect between provincial transportation carbon emissions has become an important issue in regional carbon emission management. This study explored the relationship and development trends associated with regional transportation carbon emissions. A social network method was used to analyze the structural characteristics of the spatial association of transportation carbon emissions. Indicators for each of the structural characteristics were selected from three dimensions: The integral network, node network, and spatial clustering. Then, this study established an association network for transportation carbon emissions (ANTCE) using a gravity model with China's provincial data during the period of 2007 to 2016. Further, a block model (a method of partitioning provinces based on the information of transportation carbon emission) was used to group the ANTCE network of inter-provincial transportation carbon emissions to examine the overall association structure. There were three key findings. First, the tightness of China's ANTCE network is growing, and its complexity and robustness are gradually increasing. Second, China's ANTCE network shows a structural characteristic of dense east and thin west. That is, the transportation carbon emissions of eastern provinces in China are highly correlated, while those of central and western provinces are less correlated. Third, the eastern provinces belong to the two-way spillover or net benefit block, the central regions belong to the broker block, and the western provinces belong to the net spillover block. This indicates that the transportation carbon emissions in the western regions are flowing to the eastern and central regions. Finally, a regression analysis using a quadratic assignment procedure (QAP) was used to explore the spatial association between provinces. We found that per capita gross domestic product (GDP) and fixed transportation investments significantly influence the association and spillover effects of the ANTCE network. The research findings provide a theoretical foundation for the development of policies that may better coordinate carbon emission mitigation in regional transportation.

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PubMed ID: 31216689

语言: English

文献类型: Article

作者关键词: transportation carbon emission; gravity model; social network; QAP regression analysis

KeyWords Plus: CO2 EMISSIONS; EFFICIENCY; INTENSITY; CHINA; MODEL

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第 17 条，共 42 条
标题: Association between New Urbanization and Sustainable Transportation: A Symmetrical Coupling Perspective
作者: Ma, F (Ma, Fei); Guo, YR (Guo, Yanru); Yuen, KF (Yuen, Kum Fai); Woo, S (Woo, Suhan); Shi, WJ (Shi, Wenjing)
来源出版物: SYMMETRY-BASEL 卷: 11 期: 2 文献号: 192 **DOI:** 10.3390/sym11020192 出版年: FEB 2019
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引用的参考文献数: 51
摘要: New urbanization (NU) and sustainable transportation (ST) are two important issues in urbanization, and their symmetrical coupling is an important factor for measuring the development of the urbanization process. To comprehensively explore the symmetrical coupling level of NU and ST in the urbanization process, this study proposed a coupling coordination degree (CCD) model and calculated the CCD values of China's nine metropolises using panel data from 2007 to 2016. The results showed that: (1) From the perspective of each city's development, the CCD values for Beijing, Tianjin and Chongqing showed a downward trend, and those for Shanghai, Guangzhou, Chengdu and Wuhan

exhibited a rising trend, while the CCD values for Zhengzhou and Xi'an fell initially and then rose gradually; (2) Based on the regions of the nine cities, the CCD values of the eastern cities and the central cities all demonstrated a growth trend, while those of the western cities were consistently lower than the central and eastern cities; however, the western cities experienced the highest growth rate. (3) Predictive results showed that the CCD levels of new urbanization and sustainable transportation in the eastern, central and western cities are projected to remain unchanged. Finally, it is expected that regionally balanced development will be realized in 2025. From the symmetrical coupling perspective, this study measured and predicted the coupling coordination level of NU and ST of nine metropolises undergoing the urbanization process, which provides a theoretical basis for effective decision-making for comprehensive and sustainable development of China's urbanization.

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文献类型: Article

作者关键词: new urbanization; entropy method; coupling coordination; sustainable transportation

KeyWords Plus: INFRASTRUCTURE; INDIA; CHINA

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第 18 条，共 42 条

标题: Cascading Failures and Vulnerability Evolution in Bus-Metro Complex Bilayer

Networks under Rainstorm Weather Conditions

作者: Ma, F (Ma, Fei); Liu, F (Liu, Fei); Yuen, KF (Yuen, Kum Fai); Lai, PL (Lai, Polin); Sun, QP (Sun, Qipeng); Li, XD (Li, Xiaodan)

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摘要: In recent years, the frequent occurrence of rainstorms has seriously affected urban-public transport systems. In this study, we examined the impact of rainstorms on the vulnerability of urban-public transport systems consisting of both ground bus and metro systems, which was abstracted into an undirected weighted Bus-Metro complex bilayer network (Bus-Metro CBN) and the passenger volume was regarded as its weight. Through the changes in the node scale, network efficiency, and passenger volume in the maximal connected component of the Bus-Metro CBN, we constructed a vulnerability operator to quantitatively calculate the vulnerability of the Bus-Metro CBN. Then, the flow-based couple map lattices (CMLs) model was proposed to simulate cascading failure scenarios of the Bus-Metro CBN under rainstorm conditions, in which the rainstorm is introduced through a perturbation variable. The simulation results show that under the condition of passenger flow overload, the network may have a two-stage cascading failure process. The impact analysis shows that there is a rainstorm intensity threshold that causes the Bus-Metro CBN to collapse. Meanwhile, we obtained the optimal node and edge capacity through capacity analysis. In addition, our analysis implies that the vulnerability of the Bus-Metro CBN network in most scenarios is mainly caused by the degradation of network structure rather than the loss of passenger flow. The network coupling strength analysis results show that the node coupling strength has greater potential to reduce the vulnerability than edge coupling strength. This indicates that traffic managers should prioritize controlling the mutual influence between bus stops (or metro stations) to reduce the vulnerability of the Bus-Metro CBN more effectively.

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语言: English
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作者关键词: urban public transport; cascading failure; vulnerability; rainstorm; complex network
KeyWords Plus: SELF-ORGANIZED CRITICALITY; COUPLED MAP LATTICE; TRANSPORT NETWORK; ROAD NETWORK; DYNAMICS; SYSTEMS; SERVICEABILITY; ROBUSTNESS; FRAMEWORK; EXTREMES

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第 19 条，共 42 条

标题: Optimal Evacuation Strategy for Parking Lots Considering the Dynamic Background Traffic Flows

作者: Mao, XH (Mao, Xinhua); Yuan, CW (Yuan, Changwei); Gan, JH (Gan, Jiahua); Zhou, JB (Zhou, Jibiao)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH **卷:** 16 **期:** 12 **文献号:** 2194 **DOI:** 10.3390/ijerph16122194 **出版年:** JUN 2 2019
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摘要: An optimal evacuation strategy for parking lots can shorten evacuation times and reduce casualties and economic loss. However, the impact of dynamic background traffic flows in a road network on the evacuation plan is rarely taken into account in existing approaches. This research develops an optimal evacuation model with total evacuation time minimization by dividing the evacuation process in a parking lot into two periods. In the first period, a queuing theory is used to estimate the queuing time, and in the second period, a traffic flow equilibrium model and an intersection delay model are employed to simulate

vehicles' route choice. To deal with these models, a modified ant colony algorithm is developed. The results of a numerical example prove that the proposed method has an advantage in improving evacuation efficiency. The results also show that background traffic flows affect not only vehicles' average queuing time in parking lots but also optimal evacuation route choice. Additionally, a sensitivity analysis indicates that the minimum threshold of headway time that allows vehicles out of a parking lot to merge into the background traffic flows on the roads connecting the exits has a great impact on average queuing time, average travel time, and total evacuation time.

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PubMed ID: 31234334

语言: English

文献类型: Article

作者关键词: optimal evacuation strategy; parking lot; dynamic background traffic flows; queuing theory; departure rate; average queuing time; average travel time; total evacuation time

KeyWords Plus: RETRIAL QUEUES; MODEL; SIMULATION; OPTIMIZATION; REDUCTION; DECISIONS; IMPACT; RISK

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第 20 条，共 42 条
标题: Incorporating Dynamic Traffic Distribution into Pavement Maintenance Optimization Model
作者: Mao, XH (Mao, Xinhua); Yuan, CW (Yuan, Changwei); Gan, JH (Gan, Jiahua)
来源出版物: SUSTAINABILITY **卷:** 11 **期:** 9 **文献号:** 2488 **DOI:** 10.3390/su11092488 **出版年:** MAY 1 2019
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摘要: An optimal pavement maintenance strategy can keep the pavement performance at a high level under budget constraint. However, the impact of changes in traffic distribution caused by maintenance actions on user costs is rarely investigated in existing approaches. This research aims to solve the optimization of pavement maintenance strategy using a multi-stage dynamic programming model combined with the stochastic user equilibrium model, which can simulate the dynamic traffic distribution in the life cycle. To deal with the proposed model, a heuristic iterative algorithm is put forward. Ultimately, a hypothetical network is established to test the model and algorithm. The testing results prove that the proposed framework has an advantage in assessing user costs comprehensively and can provide an effective and optimal pavement maintenance strategy in a 30-year life cycle, which improves the efficiency of budget and pavement conditions. Additionally, this research provides quantitative evidence of interdependency in a road network, i.e., pavement maintenance actions on links can interfere with the user costs and traffic flow distribution in the whole network, which should be taken into account in pavement maintenance decision-making.
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语言: English
文献类型: Article
作者关键词: pavement maintenance optimization; dynamic traffic distribution; stochastic user equilibrium; life cycle; maintenance cost; user cost; heuristic iterative algorithm
KeyWords Plus: JOINT OPTIMIZATION; REHABILITATION; MANAGEMENT; SYSTEM; IMPACT; STRATEGIES; POLICIES; DESIGN; COST; FLOW
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第 21 条，共 42 条
标题: Risk Factors Affecting Traffic Accidents at Urban Weaving Sections: Evidence from China
作者: Mao, XH (Mao, Xinhua); Yuan, CW (Yuan, Changwei); Gan, JH (Gan, Jiahua); Zhang, SQ (Zhang, Shiqing)
来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH **卷:** 16 **期:** 9 **文献号:** 1542 **DOI:** 10.3390/ijerph16091542 **出版年:** MAY 1 2019
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摘要: As a critical configuration of interchanges, the weaving section is inclined to be involved in more traffic accidents, which may bring about severe casualties. To identify the factors associated with traffic accidents at the weaving section, we employed the multinomial logistic regression approach to identify the correlation between six categories of risk factors (drivers' attributes, weather conditions, traffic characteristics, driving behavior, vehicle types and temporal-spatial distribution) and four types of traffic accidents (rear-end, side wipe, collision with fixtures and rollover) based on 768 accident samples of an observed weaving section from 2016 to 2018. The modeling results show that drivers' gender and age, weather condition, traffic density, weaving ratio, vehicle speed, lane change behavior, private cars, season, time period, day of week and accident location are important factors affecting traffic

accidents at the weaving section, but they have different contributions to the four traffic accident types. The results also show that traffic density of >= 31 vehicle/100 m has the highest risk of causing rear-end accidents, weaving ration of >= 41% has the highest possibility to bring about a side wipe incident, collision with fixtures is the most likely to happen in snowy weather, and rollover is the most likely incident to occur in rainy weather.

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语言: English

文献类型: Article

作者关键词: traffic accidents; risk factors; weaving section; multinomial logistic regression

KeyWords Plus: MULTIVARIABLE REGRESSION-MODEL; LOGISTIC-REGRESSION; DRIVING BEHAVIOR; NEURAL-NETWORKS; INJURY SEVERITY; SAFETY; CLASSIFICATION; VEHICLE; TREE; PERCEPTION

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第 22 条，共 42 条

标题: Debt Risk Evaluation of Toll Freeways in Mainland China Using the Grey Approach

作者: Mao, XH (Mao, Xinhua); Gan, JH (Gan, Jiahua); Zhao, XL (Zhao, Xilong)
来源出版物: SUSTAINABILITY **卷:** 11 **期:** 5 **文献号:** 1430 **DOI:** 10.3390/su11051430 **出版年:** MAR 1 2019
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摘要: With a proactive loan policy to raise construction funds, a large number of toll freeways have been built in Mainland China in the past three decades. However, it brought about a long-term heavy debt burden for most provincial governments. To ensure financial sustainability of toll freeways, an accurate and appropriate debt risk evaluation has become necessary. This research aims to explore debt risk factors and calculate the overall debt risk levels of toll freeways using the grey approach. Debt risk factors were identified as belonging to five categories-debt scale, debt structure, debt management, external environment, and solvency-and three new debt risk factors were added for specific concern of toll freeways-toll revenue, free cash flow, and earnings before interest, tax, depreciation, and amortization (EBITDA) margin. Debt risk levels of toll freeways in 29 provinces in Mainland China were evaluated by the proposed method and classified into three groups-low debt risk, medium debt risk, and high debt risk according to grey possibility degree ranges. Calculation results show that six provinces have low debt risk, 10 provinces have medium debt risk, and 13 provinces have high debt risk. Additionally, some specific policies to reduce toll freeway debt risk were provided based on the evaluation findings.
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语言: English
文献类型: Article
作者关键词: toll freeways; debt risk evaluation; grey approach; grey possibility degree
KeyWords Plus: PRIVATE PARTNERSHIP PROJECTS; FREE CASH FLOW; CAPITAL STRUCTURE; FINANCIAL ANALYSIS; CAPACITY CHOICE; ROAD NETWORK; INFRASTRUCTURE; HIGHWAY; INVESTMENT; PPP
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第 23 条，共 42 条
标题: A Dynamic Traffic Assignment Model for the Sustainability of Pavement Performance
作者: Mao, XH (Mao, Xinhua); Wang, JW (Wang, Jianwei); Yuan, CW (Yuan, Changwei); Yu, W (Yu, Wei); Gan, JH (Gan, Jiahua)
来源出版物: SUSTAINABILITY 卷: 11 期: 1 文献号: 170 DOI: 10.3390/su11010170 出版年: JAN 1 2019
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摘要: Existing Dynamic Traffic Assignment (DTA) models assign traffic flow with the principle of travel time, which are easy to distribute most of the traffic flows on the shortest path. A serious unbalance of traffic flow in the network can speed up pavement deterioration of highways with heavy traffic, which influences the sustainability of pavement performance and increases maintenance expenditures. The purpose of this research is to obtain a more optimized traffic assignment for pavement damage reduction by establishing a multi-objective DTA model with the objectives of not only minimum travel time but minimum decline of Present Serviceability Index (PSI) for pavements. Then, teaching-learning-based optimization (TLBO) algorithm is utilized to solve the proposed model. Results of a case study indicate that a more balanced traffic flow assignment can be realized by the model, which can effectively reduce average PSI loss, save maintenance expenditures, extend pavement service life span, save fuel consumption and reduce pollutant emissions in spite of a little increase of average travel time. Additionally, sensitivity of weight factor for the two objective functions is analyzed. This research provides some insights on methods on sustainable pavement performance.
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语言: English
文献类型: Article
作者关键词: sustainability of pavement performance; PSI; maintenance expenditures; pavement service life span; fuel consumption; pollutant emissions; travel time; DTA model; TLBO
KeyWords Plus: VARIATIONAL INEQUALITY FORMULATION; LEARNING-BASED OPTIMIZATION; EQUILIBRIUM; SYSTEM; ROAD; CHOICE; IMPACT; FLOWS
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第 24 条，共 42 条
标题: Does the "Belt and Road Initiative" Promote the Economic Growth of Participating Countries?
作者: Sun, QP (Sun, Qipeng); Zhang, XD (Zhang, Xiaodong); Xu, XQ (Xu, Xiaoqing); Yang, Q (Yang, Qi); Wang, SJ (Wang, Sijie)
来源出版物: SUSTAINABILITY **卷:** 11 **期:** 19 **文献号:** 5240 **DOI:** 10.3390/su11195240 **出版年:** OCT 1 2019
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摘要: With the slowdown of global economic growth, how to stimulate economic growth has become a hot topic in recent years. The "Belt and Road (B&R) Initiative," as a newly proposed global economic stimulus plan, has attracted widespread attention from scholars. In this study, the research used the propensity score matching difference in difference (PSM-DID) method to evaluate whether the "B&R" Initiative has promoted the economic growth of the countries along the route. Objectively assessing the effect of its implementation is not only important for its completion and improvement in the future but also to verify whether the "B&R" Initiative promotes economic growth in participating countries. A logistic regression is constructed using the statistical data obtained by the World Bank on 110 countries from 2011 to 2016. The results show that the "B&R" Initiative has effectively promoted the rapid growth of the GDP of participating countries but the improvement of per capita GDP growth is not significant. Through the analysis of the selected variables, corresponding policy recommendations are proposed. Moreover, objective proofs are provided to encourage all the countries in the world to participate in the "B&R" Initiative.
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语言: English
文献类型: Article
作者关键词: belt and road initiative; economic growth; double difference; propensity matching score
KeyWords Plus: CHINA BELT; CORRUPTION
地址: [Sun, Qipeng; Zhang, Xiaodong; Xu, Xiaoqing; Wang, Sijie] Changan Univ, Sch Econ & Management, Xian 710064, Shaanxi, Peoples R China.
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第 25 条，共 42 条

标题: Spatial Pattern of Urban System Based on Gravity Model and Whole Network Analysis in Eight Urban Agglomerations of China

作者: Sun, QP (Sun, Qipeng); Wang, SJ (Wang, Sijie); Zhang, KQ (Zhang, Kaiqi); Ma, F (Ma, Fei); Guo, XZ (Guo, Xiaozhuang); Li, TZ (Li, Tingzhen)

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摘要: An urban agglomeration (shorted as UA) is a highly developed spatial form of integrated city and an important driving force for regional economic development. The network of UA mainly reflects the spatial connections and organizational structure of all cities, which is of great significance for understanding the development status of UAs and revealing their development laws. However, there are few horizontal studies comparing the network structure of China's UAs. This study constructs the economic network of China's eight UAs with the gravity model and explores the overall network structure and city centrality using indicators in network analysis. Then, two groups of UAs with similar network structures are compared. Finally, the association between the gravity model and empirical data is discussed. The results show that the spatial pattern of cities in UAs can be expressed by the gravity model approximately. Besides, UAs with different development levels present different spatial network structures, but the network structures cannot reflect the development levels of UAs directly. We also find that the cities with high betweenness centrality have greater development potential to be the next growth pole.

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语言: English

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KeyWords Plus: WORLD CITY NETWORK; CENTRAL PLACE; FUNCTIONAL POLYCENTRICITY; CONNECTIVITY; HIERARCHIES; CENTRALITY; DYNAMICS; CITIES; LENS

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标题: Synergetic Effect and Spatial-Temporal Evolution of Railway Transportation in Sustainable Development of Trade: An Empirical Study Based on the Belt and Road
作者: Sun, QP (Sun, Qipeng); Wang, X (Wang, Xiu); Ma, F (Ma, Fei); Han, YH (Han, Yanhu); Cheng, QQ (Cheng, Qianqian)
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摘要: The low-energy consumption and large-capacity of railway transportation play vital catalytic roles in economy and trade. Scientific research investigating the relationship between railway transportation and trade is important in promoting their coordinated development, exerting their synergistic effects, and realizing sustainable trade. Given the serious imbalance between the development of railway transportation and trade of countries along the the Belt and Road (The Silk Road Economic Belt and the 21st Century Maritime Silk Road), we used the entropy weight method to calculate the level of railway transportation and trade development, and then calculated the coordination degrees of the countries along the Belt and Road between them using the coupling-coordination model. The results showed that the average coupling degree between railway transportation and trade development was 0.728, which means that there is a strong interaction between railway transportation and trade. Only 25% of these countries achieved highly coordinated development, and these countries

could achieve sustainable trade by fully utilizing the synergetic effect of railway transportation and trade. The coordination degrees of countries along the Belt and Road have strong spatial agglomeration, and the performance of Middle and Eastern European countries is better. Finally, we put forward some suggestions, such as strengthening the construction of railway infrastructure, improving the railway operation level, developing multimodal transport, and enlarging the role of the railway transportation network in the trade of the Belt and Road to achieve sustainable trade.

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作者关键词: sustainable trade; railway transportation; synergy effect; the Belt and Road

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第 27 条，共 42 条

标题: Exploring the Node Importance and Its Influencing Factors in the Railway Freight Transportation Network in China

作者: Sun, QP (Sun, Qipeng); Guo, XZ (Guo, Xiaozhuang); Jiang, WJ (Jiang, Wenjing); Ding, HY (Ding, Haiying); Li, TZ (Li, Tingzhen); Xu, XB (Xu, Xingbo)

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摘要: Node importance is a key factor affecting the overall operation efficiency of a railway freight transportation network (RFTN) that can be measured with the indicators of Hub and PageRank. Based on complex network theory and the national railway cargo exchange data of China's provinces, this study constructs an RFTN model with the 31 provinces as the nodes and measures the values of Hub and PageRank for the 31 provinces. Then, the time evolution law of the importance of the provincial nodes is analyzed comprehensively, and, using a regression model, the influencing factors of the importance of the provincial nodes are identified. The results show the following. (1) The uneven distribution of natural resources will affect the spatial changes in the importance of RFTN nodes. The Hub values tended to cluster around the average, and the economic structure of the output-oriented provinces improved as a whole. At the same time, the PageRank values of many provinces in the central and western regions significantly increased, and those provinces exhibited more frequent exchanges of goods with other provinces and closer economic ties with other regions. (2) The traffic fixed asset investments and the population density have the most obvious influences on the importance of the provincial nodes with a positive effect. In contrast, the railway freight concentration (RFC) coefficient, geographical location (longitude and latitude), and coastal region all have negative effects on the importance of provincial nodes. The results of this study provide scientific decision-making support for the reasonable establishment and distribution of RFTN hubs in China.

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KeyWords Plus: AIR TRANSPORTATION; EVOLUTION

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第 28 条，共 42 条

标题: Evolutionary Game between Government and Ride-Hailing Platform: Evidence from China

作者: Sun, QP (Sun, Qipeng); He, YQ (He, Yuqi); Wang, YJ (Wang, Yongjie); Ma, F (Ma, Fei)

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摘要: The ride-hailing industry is a new business form that combines traditional taxi services with Internet technology and a sharing economy. However, after its emergence, countries have focused on finding ways to regulate this industry. The regulation of ride-hailing has gone through three stages: from denial of negation to laissez-faire and prudential supervision. This study focuses on the market regulation of the ride-hailing industry, discusses whether ride-hailing platforms require strict regulation under the current Internet setting, and provides evidence for this problem from the perspective of evolutionary game theory between the behavior of the government and the platforms. This study argues that both ride-hailing platforms and the government are evolutionary game players with bounded rationality, constantly adjusting their strategies through confrontation, dependence, and restriction.

Therefore, this study constructs a two-dimensional game model between the government and ride-hailing platforms and analyzes the stability strategies of the two participants in different scenarios, to clarify the game behavior and the game return matrix. Assuming that loose government regulation and the standard operation of the ride-hailing platforms are the optimal Pareto equilibrium of the game system, the study concludes that this optimal equilibrium cannot be achieved under the current conditions. Through parameter analysis and sample simulation calculations, the system can be directed toward this equilibrium by reducing government supervision cost and increasing government punishment. This provides a theoretical basis for the government to regulate the ride-hailing industry from the perspective of quantitative analysis. Related implications are finally proposed, which can help the decision-makers better understand the regulation countermeasures of the government and ride-hailing platforms.

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第 29 条，共 42 条

标题: A panel analysis of the sustainability of logistics industry in China: based on non-radial slacks-based method

作者: Tan, LL (Tan, Lingling); Wu, QQ (Wu, Qunqi); Li, Q (Li, Qian); Cheng, W (Cheng,

Wen); Gu, YL (Gu, Yulei)

来源出版物: ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH **卷:** 26 **期:** 21 **页:** 21948-21963 **DOI:** 10.1007/s11356-019-05481-8 **出版年:** JUL 2019

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摘要: Previous studies have primarily targeted at positive causal linkages between the logistics industry and economic benefits, resulting in biased findings without the consideration of undesirable social and environmental problems. Therefore, this paper aims to develop a holistic approach to the assessment of logistics efficiency, through considering comprehensive inputs and desirable and undesirable outputs. In specific, contextualized in China, this paper comprehensively examined the spatiotemporal variations of China logistics efficiency and further investigated the impact of some exogenous factors. Results indicate that the overall logistics efficiency of China was low, but temporally showed a trend of increase. Spatially, the logistics efficiency followed the pattern of Eastern > Central > Western > Northeastern. Moreover, for the spatial interaction among adjacent provinces, there occurred high-high patterns in the Eastern, and low-low aggregation in the Western and Northeastern regions. However, along with time, the spatial interaction among adjacent provinces was weakening. For exogenous factors, level of economic development, urbanization level, utilization rate of logistics resources, and location advantage had a significant positive impact on SLE, while the effect of labor quality was not significant. Overall, this paper enriches the theoretical understandings of sustainable logistics efficiency evaluation and unbiasedly inform central and local governments with approaches to optimizing logistics efficiency.

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PubMed ID: 31140090
语言: English
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作者关键词: Sustainable logistics efficiency; Super-SBM-DEAmodel; Undesirable outputs; Moran's I; Tobit regression model
KeyWords Plus: ENVIRONMENTAL EFFICIENCY ANALYSIS; SYSTEM; GROWTH; ENERGY; TRANSPORTATION; INDICATORS; OPERATIONS; DYNAMICS; DESIGN; IMPACT

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标题: Social Project Culture: A New Project Management Culture to Promote the Sustainable Development of Organizations
作者: Wang, HL (Wang, Hailing); Bai, LB (Bai, Libiao); Huang, N (Huang, Ning); Du, Q (Du, Qiang); Zhang, TT (Zhang, Tingting)
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摘要: With economic development and globalization, more organizations have been cooperating with foreign enterprises, which brings not only opportunities but also management difficulties and competitions with organizations. Organizations must improve their management and adapt to changing market conditions and the requirements and needs of its customers to maintain and strengthen its position in the market. Management by Project (MBP) uses technical methods of modern project management (PM) to manage various tasks and activities that are considered as projects. It is an effective way to solve management problems and improve management levels and enterprise competitiveness. However, few small and medium-sized enterprises apply MBP in their operation and management processes. Therefore, this paper presents a new idea to promote the application of MBP and the formation of a PM culture within society. In this paper, we searched a major database using the systematic literature review method and analyzed the articles directly or indirectly linked

to our paper to obtain literature supporting the views of this article. First, this paper presents a new kind of management culture from the social aspect, termed as Social Project Culture (SPC), which can promote sustainable development and improve the management level and efficiency of organizations by promoting MBP application across society. Second, by analyzing the SPC definition, its three functions, i.e., project management behavior, management and risk control capacity, and international competitiveness, are provided. Then, to help organizations apply this method, an evolutionary path is proposed, including the creation stage, formative stage, mature stage, and heritage stage. Finally, to ensure the continued optimization of SPC, four safeguard measures in terms of theory, institution, behavior, and ideology are proposed.

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语言: English

文献类型: Article

作者关键词: social project culture; management by project; evolution path; sustainable development

KeyWords Plus: KNOWLEDGE TRANSFER; ENTERPRISE; SELECTION; IMPACT

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第 31 条，共 42 条

标题: Spontaneous punishment promotes cooperation in public good game

作者: Wang, QL (Wang, Qiuling); Meng, HR (Meng, Haoran); Gao, B (Gao, Bo)

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摘要: Punishment widely exists in social and biological systems and it has been proved to be an effective way to promote cooperation in evolutionary game in previous work. In this paper, we introduce a new mechanism of punishment that the punishment fine can be multiplied if there are several punishers decide to punish a defector, which leads to a low payoff of defector and promotes the level of cooperation. This mechanism can simulate group hunt which is common in natural animal world, for example, in biological system, a pack of animal in which every individual cooperates with each other can hunt a prey which is stronger than an individual inside the pack. This phenomenon can be explained by that the ability of punishment is multiplied by individuals cooperating with each other to carry out the punishment. A pack of wolves can make the process of hunt easier than the hunt implemented by a lone wolf, inspired by which we construct this mechanism of punishment to simulate the group punishment. Interestingly, we find that this mechanism can dramatically promotes the level of cooperation when we compare the simulation result with traditional evolutionary public good game. In order to figure out how our new mechanism of punishment promotes the cooperation, we have drawn several figures below to explain the mechanism. Our work simulates a widely existing phenomenon in biological and social systems and reveals some essential principles in the process of evolution. (C) 2019 The Authors. Published by Elsevier Ltd.

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作者关键词: Cooperation; Spontaneous punishment; Evolutionary game theory

KeyWords Plus: EVOLUTIONARY PRISONERS-DILEMMA; ALTRUISTIC PUNISHMENT; INDIRECT RECIPROCITY; REPLICATOR DYNAMICS; REPUTATION; REWARD; DIVERSITY; EMERGENCE; MECHANISM

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标题: Comprehensive Evaluation of the Sustainable Development of Battery Electric Vehicles in China
作者: Wang, YJ (Wang, Yijiao); Zhou, GG (Zhou, Guoguang); Li, T (Li, Ting); Wei, X (Wei, Xiao)
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摘要: Due to the rapid growth in the total number of vehicles in China, energy consumption and environmental pollution are serious problems. The development of electric vehicles (EVs) has become one of the important measures for solving these problems. As EVs are in a period of rapid development, sustainability research on them is conducive to the timely discovery of-and solution to-problems in the development process, but current research on the sustainability of EVs is still scarce. Based on the strategic development direction of EVs in China, battery electric vehicles (BEVs) were chosen as the research object of this study. The theory and method of the life cycle sustainability assessment (LCSA) were used to study the sustainability of BEVs. Specifically, the indicators of the life cycle assessment (LCA) were constructed, and the GaBi software was used to assess the environmental dimensions. The framework of life cycle costing (LCC) was used to assess the economic dimensions from the perspective of consumers. The indicators of the social life cycle assessment (SLCA) of stakeholders were constructed to assess the social dimension. Then, the method of the technique for order preference by similarity to ideal solution (TOPSIS) was selected for multicriteria decision-making in order to integrate the three dimensions. A specific conclusion

was drawn from a comparison of BEVs and internal combustion engine vehicles (ICEVs). The study found that the life cycle sustainability of ICEVs in China was better than that of BEVs. This result might be unexpected, but there were reasons for it. Through sensitivity analysis, it was concluded that the current power structure and energy consumption in the operation phase of BEVs had a higher environmental impact, and the high cost of batteries and the government subsidy policy had a higher impact on the cost of BEVs. Corresponding suggestions are put forward at the end of the article.

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语言: English

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作者关键词: BEVs; sustainable development; LCSA; LCA; LCC; SLCA; MCDM

KeyWords Plus: LIFE-CYCLE ASSESSMENT; TEREPHTHALATE PET BOTTLES; PRODUCT DEVELOPMENT; COST-ANALYSIS; FUEL-CELL; COMPETITIVENESS; METHODOLOGY; POLICY

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第 33 条，共 42 条

标题: Infrastructure Operation Efficiency and Influential Factors in Developing Countries: Evidence from China

作者: Wei, X (Wei, Xiao); Xu, HC (Xu, Haicheng); Zhang, BQ (Zhang, Beiqi); Li, JL (Li, Jianlong)

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摘要: The development of sustainable infrastructure has been identified as one of the seventeen sustainable development goals by the United Nations. Keeping the operation of infrastructure sustainable in terms of economy becomes a major challenge in developing countries. The objective of this research is to evaluate the operation efficiency of the expressway and explore the key influential factors. This research took expressway mileage as the physical output and evaluated the operation efficiency of the expressway companies based on the super-efficiency Slacks-Based Measure (SBM) model; additionally, we analyzed the influential factors on the basis of the fixed-effects regression model. The results showed the following: (1) The average value of operation efficiency of China's expressway companies from 2007 to 2017 was 0.904. In general, the operation of expressways was efficient. However, the differences in operation efficiency among the eleven expressway companies were significant, and some companies were seriously inefficient. (2) The asset-liability ratio, the scale, and the structure of property rights in the companies were shown to be the main factors affecting the operation efficiency. These results indicate that the development of innovative financing modes and optimization of the scale of each company are the key directions for infrastructure reform, which could eventually narrow the differences in operation efficiency and allow the development of sustainable infrastructure.

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文献类型: Article

作者关键词: infrastructure; operation efficiency; super-efficiency SBM model; debt-financed

KeyWords Plus: SLACKS-BASED MEASURE

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第 34 条，共 42 条
标题: Improving the Efficiency of Highway Construction Project Management Using Lean Management
作者: Wu, XY (Wu, Xueying); Zhao, WY (Zhao, Wenyi); Ma, TS (Ma, Tianshan); Yang, ZY (Yang, Ziyu)
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摘要: The construction industry is often ranked top in producing the largest amount of waste during a project, be it the waste of material resources or the waste of manpower. This has elevated the need for an improved and more structured management technique. This study will look into the principles and practices of lean management pertinent to highway construction projects to analyze whether lean management practices can improve the management efficiency for complex projects. This study adopted a quantitative approach, and a linear regression model has been used to investigate correlations between the lean test factors and the efficiency-dependent variables. It was found that lean management tools that are used repeatedly and the ones that require a high level of detailing are positively associated with efficiency improvement in highway construction projects. In particular, LPS, JIT, and VM were found to be more commonly used in highway construction projects. The research results will aid in the initial decision-making process of the project managers, as they will be able to map different lean tools with their benefits and limitations and then select the one that best suits the project needs and deliverables. Future studies can adopt the interpretivism paradigm to explore new theories and concepts related to highway construction management.
入藏号: WOS:000477054300009
语言: English
文献类型: Article
作者关键词: Lean management; project management; highway construction project; complex project
KeyWords Plus: COST OVERRUN; IMPLEMENTATION; INDUSTRY; THINKING
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第 35 条，共 42 条
标题: Improving the Impact of Green Construction Management on the Quality of Highway Engineering Projects
作者: Wu, XY (Wu, Xueying); Zhao, WY (Zhao, Wenyi); Ma, TS (Ma, Tianshan)
来源出版物: SUSTAINABILITY **卷:** 11 **期:** 7 **文献号:** 1895 **DOI:** 10.3390/su11071895 **出版年:** APR 1 2019
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摘要: The implementation of green projects continues to encounter several challenges with regards to the project management techniques applied in different construction projects. This study aims to find out the relationship between green construction management and the quality of highway engineering projects, and to try to help innovators identify the best place to focus. This study adopted mixed research method where both quantitative and qualitative research approaches were used. The analysis techniques adopted included Pearson's correlation, regression analysis, and Student's t-test. The study found that the effect of financial issues, design codes and standards, and various risks will be the most effective green performance constructing strategies. It is revealed that there are eight determinants explained 77.5% of the variations in the quality of the highway engineering projects. The quality of highway engineering projects was expected to improve by 0.246 units for a unit change in the adoption of the green construction management. The research result will help stakeholders in improving the quality standards for highway engineering projects and help practitioners and experts in the construction project industry to better understand the relationship between green construction management and quality of highway engineering projects, and help them improve green construction management in an effort to promote sustainable development of

project management. This research can be further studied in the future to expand the scope of data analysis to explain the differences in the level of social development.

入藏号: WOS:000466551600072

语言: English

文献类型: Article

作者关键词: green construction management; highway engineering project; green construction project; green performance contracting strategies

KeyWords Plus: INFRASTRUCTURE; SELECTION; PERFORMANCE; FRAMEWORK; CRITERIA

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标题: Formulating a learner model for evaluating construction workers' learning ability during safety training

作者: Xu, S (Xu, Sheng); Zhang, MG (Zhang, Mengge); Hou, L (Hou, Lei)

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摘要: The improvement of safety performance of construction workers heavily lies in safety training, and training technologies, materials and organisations. However, the traditional one-size-fit-all safety training does not cater for the needs of heterogeneous workers.

Personalised training may proffer a better solution for heterogeneous workers in the construction sector. To understand the rationale of personalised training, this study formulated a learner model that can capture and evaluate the learning abilities of individual workers. Methodically, a survey on 170 construction workers was conducted, and evidenced that they were heterogeneous in safety training motivation, established knowledge, and emotions during the knowledge acquisition process; and were vulnerable to the model effect and convenience effect during the knowledge application process. The results also showed that workers generally perceived safety training as a mandatory requirement, rather than inherently motivated; emotional changes was the most influencing factor in the knowledge acquisition process; about 40% of the workers were strongly vulnerable to the model effect and convenience effect; and 18% of the workers needed to improve their ability of knowledge acquisition and knowledge application. The correlation analysis and t-test indicated that age, year of experience, trade, project type, organisation type and site environment influenced workers' learning characteristics and abilities; which lead to the varied levels of safety understanding, awareness and performance. It was also concluded that the construction workers had unique characteristics in their safety learning process and the concept of adapted safety learning could potentially improve the efficiency of safety training.

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语言: English

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作者关键词: Safety training; Personalised training; Learner model; Learning process

KeyWords Plus: FUZZY COMPREHENSIVE EVALUATION; SKILL DEVELOPMENT; PROGRAM; SYSTEM; HEALTH; COMMUNICATION; INTERVENTION; PERFORMANCE; KNOWLEDGE; EDUCATION

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第 37 条，共 42 条
标题: Research on Risk Measurement of Supply Chain Emergencies in International Capacity Cooperation
作者: Yan, BR (Yan, Bo-Rui); Dong, QL (Dong, Qian-Li); Li, Q (Li, Qian)
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摘要: International capacity cooperation is easily affected by the interweaving of its internal and external environment. As the risk accumulation exceeds the threshold, a supply chain crisis and even emergency will occur and serious losses will be caused. Regarding multinational operation and international capacity cooperation, 208 cases were summarized to identify risk types and high-incidence areas, and a risk measurement index system was established. A Fuzzy AHP (Analytic Hierarchy Process) method was used to evaluate the importance of each risk index. It was found that country risk was the main cause of supply chain emergencies in international capacity cooperation. Construction, water and electricity supply, mining and manufacturing were major areas of emergencies. In international capacity cooperation, country risk and cross-cultural risk were more important in external risks, while in internal risk, financial risk and decision risk were more important.
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语言: English
文献类型: Article
作者关键词: international capacity cooperation; emergencies; "the Belt and Road"; global value chain; Fuzzy AHP
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第 38 条，共 42 条
标题: The effects of transformational leadership, competitive intensity and technological innovation on performance
作者: Yang, HJ (Yang, Huijun); Yang, JJ (Yang, Jianjun)
来源出版物: TECHNOLOGY ANALYSIS & STRATEGIC MANAGEMENT 卷: 31 期: 3 页: 292-305 **DOI:** 10.1080/09537325.2018.1498475 出版年: MAR 4 2019
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摘要: This study aims to determine the three-way interaction effects of transformational leadership, technological innovation (i.e. product and process innovation) and competitive intensity on firm performance by detecting three-way interactions involving slope differences in moderated multiple regression. Based on a sample of 182 manufacturing enterprises in China, this paper finds that firms under transformational leadership are more likely to conduct process innovation, that the joint effect of the interaction between process innovation and competitive intensity is negatively related to firm performance and that the joint effect of the interaction between transformational leadership and competitive intensity is positively related to firm performance. Accordingly, this paper concludes that a firm should conduct more process innovation in a moderately competitive environment, but it should conduct less process innovation in a fiercely competitive environment, where in stronger transformational leadership should be adopted.
入藏号: WOS:000456180300004
语言: English
文献类型: Article
作者关键词: Transformational leadership; innovation; competitive intensity
KeyWords Plus: RESEARCH-AND-DEVELOPMENT; PRODUCT INNOVATION; PSYCHOLOGICAL EMPOWERMENT; MARKET COMPETITION; FIRM PERFORMANCE; SELF-CONCEPT; CREATIVITY; CEO; ROLES; STYLE

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第 39 条，共 42 条

标题: Improving the innovation ability of engineering students: a Science and Technology Innovation Community organisation network analysis

作者: Zhang, JX (Zhang, Jingxiao); Li, R (Li, Rui); Li, H (Li, Hui); Skitmore, M (Skitmore, Martin); Ballesteros-Perezeand, P (Ballesteros-Perezeand, Pablo)

来源出版物: STUDIES IN HIGHER EDUCATION **DOI:** 10.1080/03075079.2019.1659761 **提前访问日期:** SEP 2019
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摘要: Science and Technology Innovation Communities (STICs) are student-led partnerships that bring together businesses, research centres, and university staff. They constitute an effective way of promoting student innovation ability. However, the students' position within the STICs organisation network may condition how their innovation ability is effectively acquired. Using Social Network Analysis (SNA), this study measures how the STICs organisation network promotes the innovation ability of its actors. The paper finds that network centrality and structural holes of the STICs organisation network are positively correlated with student innovation ability. The results are validated through robustness tests in three different STICs, involving engineering students from China's Chang'an University. Semi-structured interviews are also conducted with 20 relevant actors of STICs. The conclusion suggests that a higher involvement of core actors, more support from schools, and more restrictive entry requirements are necessary to improve the organisation management

and training level of engineering students in STICs.

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语言: English

文献类型: Article; Early Access

作者关键词: Engineering education; innovation ability; social network analysis; Science and Technology Innovation Community (STIC); student development

KeyWords Plus: LINK PREDICTION; EDUCATION; COMPETENCES; IMPACT

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第 40 条，共 42 条

标题: Improvement of students problem-solving skills through project execution planning in civil engineering and construction management education

作者: Zhang, JX (Zhang, Jingxiao); Xie, HY (Xie, Haiyan); Li, H (Li, Hui)

来源出版物: ENGINEERING CONSTRUCTION AND ARCHITECTURAL

MANAGEMENT **卷:** 26 **期:** 7 **页:** 1437-1454 **DOI:** 10.1108/ECAM-08-2018-0321 **出版年:** AUG 19 2019
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摘要: Purpose The purpose of this paper is to improve students' problem-solving skills in civil engineering and construction management education. Design/methodology/approach The design includes structured role-playing as a pedagogical method in 21 project teams with a total of 82 undergraduate students at Chang'an University, China, in a nine-week Building Information Modeling (BIM) capstone course. The methodology is a teaching-learning experiment in a civil engineering education program with a detailed description of the empirical case and assessment instruments. The approach is to train project execution planning in a capstone course by role-playing with a real-world project using the procedures of the BIM Project Execution Planning Guide (PEPG) and process mapping. Findings The study finds that students can significantly improve their problem-solving skills through planning and role-specific communication during projects.
Originality/value This paper fulfills an identified need to study how role-playing in information and technology rich environments can be structured.
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语言: English
文献类型: Article
作者关键词: Case study; Building information modelling; Constructions education
KeyWords Plus: BIM; INTEGRATION; SITE
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第 41 条，共 42 条

标题: Is tourism really affected by logistical operations and environmental degradation? An empirical study from the perspective of Thailand

作者: Zhang, Y (Zhang, Yu); Khan, SAR (Khan, Syed Abdul Rehman); Kumar, A (Kumar, Anil); Golpira, H (Golpira, Heris); Sharif, A (Sharif, Arshian)

来源出版物: JOURNAL OF CLEANER PRODUCTION **卷:** 227 **页:** 158-166 **DOI:** 10.1016/j.jclepro.2019.04.164 **出版年:** AUG 1 2019

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摘要: We do this research is to examine the relationship between tourism, environmental degradation, and logistics & transport-related operations in a time series data of Thailand from 2001 to 2017. The study employed the autoregressive distributed lag (ARDL) statistical method to study the short-term and long-term relationship between endogenous and explanatory variables. The research results indicate that logistics and transport-related operations positively correlated with inbound tourism. Because logistics and transportation provide foreign tourist easy access to tourist destinations/places, while fossil fuel and carbon emissions have negative effects on inbound tourism in the context of Thailand. On the other hand, a greater level of crime discourages international tourists to visit and strongly negatively associated with inbound tourism both in the short-run and long-run. This research concludes with the importance of the logistics and transport sector that deem it is necessary to increase international tourists' arrivals and enhance the quality of inbound tourism. In addition, governmental authorities should enforce green practices in logistical and transport-related operations, and need to increase tourist safety and security, which may mitigate harmful effects on environmental sustainability, reduces criminal activities and also will attract foreign tourists respectively. (C) 2019 Elsevier Ltd. All rights reserved.

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作者关键词: Inbound tourism; Logistics and transportation; Environmental sustainability

KeyWords Plus: SUPPLY CHAIN MANAGEMENT; HIGH-SPEED RAIL; INTERNATIONAL TOURISM; ENERGY-CONSUMPTION; GREEN LOGISTICS; ECONOMIC-GROWTH; CO2 EMISSIONS; PERFORMANCE; TRANSPORTATION; DETERMINANTS

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标题: An assessment of the relationship between driving skills and driving behaviors among Chinese bus drivers

作者: Zhang, ZB (Zhang, Zuobo); Ma, TS (Ma, Tianshan); Ji, NY (Ji, Nuoya); Hu, Z (Hu, Zhe); Zhu, WY (Zhu, Wenying)

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摘要: To provide helpful suggestions to bus companies regarding reducing the number of bus accidents and improving public transportation safety, we further researched the relationship between driving skills and driving behaviors; bus drivers from six bus companies of the Hefei Bus Group were investigated. The reliability and validity of the Driver Behaviour Questionnaire, the Driver Skill Inventory, and 287 valid questionnaires were tested; the relationships between the Driver Behaviour Questionnaire and Driver Skill Inventory factors were explored; and their influence on traffic accidents was analyzed by structural equation modeling. Significant positive associations were found between driving experience and safety motive, whereas negative relationships were found between errors and safety motive. Safety motive has a negative effect on violations, and violations are the most important factor leading to traffic accidents. Therefore, bus companies should enhance safety education, and interventions should not only directly relate to the involvement of bus drivers in traffic accidents but also consider the role played by violations.
入藏号: WOS:000460994900001
语言: English
文献类型: Article
作者关键词: Bus driver; driving skill; driving behavior; structural equations; traffic safety
KeyWords Plus: TAXI DRIVERS; QUESTIONNAIRE; DBQ; VALIDATION; ANGER; WORK; RISK
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汽车学院

第 1 条，共 17 条
标题: A Case Study in China to Determine Whether GPS Data and Derivative Indicator Can Be

Used to Identify Risky Drivers

作者: Fu, R (Fu, Rui); Tong, L (Tong, Liu); Guo, YX (Guo, Yuxi); Zhang, SW (Zhang, Shiwei); Cheng, WD (Cheng, Wendong)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2019 文献号: 9072531 DOI: 10.1155/2019/9072531 出版年: NOV 24 2019

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摘要: This paper presents an investigation of the relationship between driver risk and factors indicating vehicle's speed and driver's acceleration behavior. The main objective is to examine whether GPS data and derivative indicator can be used to identify risky drivers by means of factor analysis. In doing so, a real road driving experiment is conducted to collect data. Fifty drivers are asked to drive along a route which includes both rural highways and urban roads. The trajectories are recorded by GPS devices to calculate speed and derive acceleration measures. Driver's behavior is also recorded by cameras and analyzed by another group of volunteers to determine whether the driver is risky or not. The drivers are then classified into five groups with different levels of risk based on the scores obtained through factor analysis. The results are verified by the volunteer's categorization and further evaluated by symbolic aggregate approximation. A binary logistic regression model is established ultimately for predicting high-risk drivers. The potential applications of this study include developing quantitative measures to identify risky drivers, especially for auto-insurance companies with usage-based insurance (UBI) applications, bus companies, and transport enterprises.

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语言: English

文献类型: Article

KeyWords Plus: DRIVING BEHAVIOR; SYSTEM; DEFINE; SPEED; SAFE

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第 2 条，共 17 条
标题: Vibration Effect Produced by Raised Pavement Markers on the Exit Ramp of an Expressway
作者: Liang, GH (Liang, Guohua); Yin, YJ (Yin, Yujie); Zhang, D (Zhang, Dong); Li, R (Li, Rui); Wu, Y (Wu, Yan); Li, Y (Li, Yu)
来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 文献号: 9196303 DOI: 10.1155/2019/9196303 出版年: 2019
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被引频次合计: 0
使用次数 (最近 180 天): 3
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引用的参考文献数: 27
摘要: Driving over raised pavement markers (RPMs) spaced at different spacing, the human body will experience different vibrations. To explore whether RPMs situated at the exit ramp of an expressway induce a good vibration warning effect, this paper determines the spacing of RPMs situated along a deceleration lane and curved ramp. Models of roads, vehicles, and RPMs are first established in the ADAMS software, after which an integrated human-chair model constructed in SolidWorks is imported into ADAMS, and then the complete model is formed so that vibration simulations of different types of vehicle at different spacing and speeds can be carried out. The results show that the vibration warning effects of the spacing proposed by the existing Chinese specifications and this paper are basically between level III and level IV, the driver's subjective feeling is between less comfortable and uncomfortable, and both induce a good vibration warning effect. For a linear deceleration lane, when considering traffic safety, a spacing of 3 m is recommended; when considering the economy, a spacing of 6 m is recommended. For a curved deceleration lane and curved ramp, according to the actual curve radius, the spacing of RPMs can refer to the spacing recommended in the paper. In addition, the vibration warning effect for cars and semi-trailer trucks initially increases with an increase in the speed; then, after reaching a certain peak speed, the effect decreases with an increase in the speed, and finally, it tends to become gentle at speeds exceeding 100 km/h. The vibration warning effect for a semi-trailer truck is better than that for a car under the same spacing and speed.
入藏号: WOS:000464783900001
语言: English
文献类型: Article
KeyWords Plus: BIOMECHANICAL MODEL
地址: [Liang, Guohua; Yin, Yujie; Zhang, Dong; Li, Rui; Li, Yu] Changan Univ, Sch Highway, Xian 710064, Shaanxi, Peoples R China.
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第 3 条，共 17 条

标题: Human-like car-following model for autonomous vehicles considering the cut-in behavior of other vehicles in mixed traffic

作者: Fu, R (Fu, Rui); Li, Z (Li, Zhen); Sun, QY (Sun, Qinyu); Wang, C (Wang, Chang)

来源出版物: ACCIDENT ANALYSIS AND PREVENTION 卷: 132 文献号: 105260 DOI: 10.1016/j.aap.2019.105260 出版年: NOV 2019
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引用的参考文献数: 63

摘要: Car-following is a common driving behavior which has a significant effect on driver safety and comfort. Although a large number of studies have focused on car-following models for autonomous vehicles (AV) and connected vehicles (CV), car-following models for AV and CV which consider cut-ins in mixed traffic have not been investigated. In this study, a human-like car-following model for AV and CV was developed by examining the effect of cut-in vehicles on car-following behavior and the expectations of drivers. The cut-in position, reaction time, acceleration, and desired distance were investigated on a real freeway in an instrumented vehicle. Corresponding to results from previous studies, the cut-in vehicles maintain a safe distance from the preceding vehicle and a larger distance from the following vehicle to avoid conflict. Analysis of the behavior of the following driver illustrates that in the keeping stages, the reaction time after the cut-in is 0.85 s for the acceleration stimulus and 0.70 s for the deceleration stimulus. These times are shorter than the response time before the cutin for the acceleration (1.95 s) and

deceleration stimuli (1.66 s). The acceleration, rate of increase in the acceleration with the relative speed, and the desired distance are lower after than before the cut-in events. In this paper, a human-like car-following model for cut-in situations is proposed, which is designed for autonomous vehicles. Unlike previous car-following models, the proposed model has a shorter response time and lower deceleration in cut-in situations. The proposed model may help to improve car-following safety, driver comfort, and trust in AVs and CVs.

入藏号: WOS:000489192000005

PubMed ID: 31442924

语言: English

文献类型: Article

作者关键词: Cut-in vehicle; reaction time; acceleration; desired distance; car-following model

KeyWords Plus: ADAPTIVE CRUISE CONTROL; IMPACTS

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第 4 条，共 17 条

标题: Effects of cognitive distraction on speed control in curve negotiation

作者: Fu, R (Fu, Rui); Zhou, Y (Zhou, Yang); Yuan, W (Yuan, Wei); Han, T (Han, Ting)

来源出版物: TRAFFIC INJURY

PREVENTION 卷: 20 期: 4 页: 431-435 DOI: 10.1080/15389588.2019.1602769 提前访问日期: MAY 2019 出版年: MAY 19 2019
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摘要: Objective: Maintaining a lower speed is recommended for curve negotiation and it has been shown that cognitive distraction may impair driving performance. This study examines the effects of different levels of cognitive distraction on the speed control of drivers negotiating a curve. Methods: Experiments were conducted on a 6 degrees of freedom driving simulator with 28 participants. A comparison of the speed and acceleration from 300 m before to 100 m after the curve was performed for baseline driving (without distraction) and 3 levels of cognitive distractions using n-back tasks. Results: The speed was significantly higher at the highest level of cognitive distraction (8%) than in baseline driving from the beginning of the curve to 50 m after it and the ratio of the highest level to the baseline was even greater throughout the range. The average acceleration was significantly higher than the baseline at the highest and the medium levels (80 and 70%, respectively) from 250 m before the curve to the one-quarter curve and from 250 to 150 m before the curve, respectively. It was also found that the point of deceleration was significantly delayed at the highest level of cognitive distraction and occurred only after the middle of the curve, whereas deceleration in baseline driving occurred just before entering the curve. Conclusions: The impairment due to cognitive distraction was confirmed in this study but was only significant at a high level of cognitive distraction. The highly distracted drivers failed to perceive the curve in advance, resulting in a slower response to changes in the roadway. The findings indicate that acceleration may be an indicator of cognitive distraction while negotiating curves. A driver is prone to cognitive distraction and the driving performance is affected when driving requires excessive attention such as curve negotiation.
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PubMed ID: 31112415
语言: English
文献类型: Article
作者关键词: Curve negotiation; cognitive distraction; speed control; driving simulator
KeyWords Plus: DRIVER PERFORMANCE; VEHICLE; ROAD
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来源出版物页码计数: 5

第 5 条，共 17 条
标题: Improved Car-Following Strategy Based on Merging Behavior Prediction of Adjacent Vehicle From Naturalistic Driving Data
作者: Guo, YS (Guo, Yingshi); Sun, QY (Sun, Qinyu); Fu, R (Fu, Rui); Wang, C (Wang, Chang)
来源出版物: IEEE ACCESS 卷: 7 页: 44258-44268 DOI: 10.1109/ACCESS.2019.2908422 出版年: 2019
Web of Science 核心合集中的"被引频次": 5
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使用次数 (最近 180 天): 2
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摘要: As the fundamental control strategy of intelligent vehicles, car-following control directly affects vehicle performance. In practical driving, drivers usually predict the behavior of vehicles in the adjacent lane before modulating the driving strategy of the host vehicle. Therefore, an adaptive cruise control (ACC) system should be equipped with the practical ability to predict the following target in advance to improve the safety and acceptability of the intelligent control strategy. In this paper, a car-following strategy based on merging prediction of adjacent vehicles is developed from the results of naturalistic on-road experiments. Based on analysis of merging behavior parameters, the Fisher discriminant method is employed to establish a merging behavior prediction model of adjacent vehicles. Then, the desired spacing car-following model is ameliorated by the proposed merging prediction model. The simulation results of the proposed car-following strategy with different cut-in scenes indicate that the prediction model could forecast two kinds of merging behavior 2 s in advance, and the prediction accuracy rate reaches 88% and 90%, respectively. The improved car-following model could allow for smoother vehicle manipulation, thus enhancing safety and ride comfort. The results provide a reference for improving intelligent vehicle control algorithms and enhancing the acceptability of intelligent systems.
入藏号: WOS:000465277400001
语言: English
文献类型: Article
作者关键词: Car-following; merging behavior prediction; desired spacing model; Fisher discriminant method
KeyWords Plus: ADAPTIVE CRUISE CONTROL; CLASSIFICATION; FRAMEWORK; COMFORT; SPEED

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第 6 条，共 17 条

标题: Influence of spatial visual conditions in tunnel on driver behavior: Considering the route familiarity of drivers

作者: Hu, YQ (Hu, Yueqi); Liu, HX (Liu, Haoxue); Zhu, T (Zhu, Tong)

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摘要: The objective of this study was to investigate how route familiarity affected drivers' eye movement features (fixation and saccade) and driving speed when driving in the entrance zone of highway tunnels with different spatial visual conditions. On-road tests were conducted on the drivers' visual characteristics and the speed were recorded in real time using an eye tracker and onboard diagnostic system. The variations in the eye movement features and speed in the entrance zone of the tunnels were analyzed. Then, statistical methods were conducted to examine the influence of the route familiarity and spatial visual conditions of tunnels on the driver behavior. The results demonstrated that the variations in the drivers' eye movements and speed were much more significant in the entrance zone of a tunnel without spatial intervisibility than in a tunnel with spatial intervisibility. The impact of this environmental transition on unfamiliar drivers was

greater than that on familiar drivers. Road familiarity reduced the drivers' period of adaptation to the tunnel entrance environment and increased the driving speed.

入藏号: WOS:000469802800001

语言: English

文献类型: Article

作者关键词: Highway tunnel; driver; entrance; eye movement characteristics; speed; traffic safety

KeyWords Plus: SAFETY; SPEED; ENFORCEMENT; INFORMATION

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第 7 条，共 17 条

标题: Exploring factors affecting the severity of night-time vehicle accidents under low illumination conditions

作者: Liu, J (Liu, Jing); Li, JY (Li, Jingyu); Wang, K (Wang, Kun); Zhao, JY (Zhao, Jianyou); Cong, HZ (Cong, Haozhe); He, P (He, Ping)

来源出版物: ADVANCES IN MECHANICAL ENGINEERING 卷: 11 期: 4 文献号: 1687814019840940 DOI: 10.1177/1687814019840940 出版年: APR 2 2019

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摘要: Night-time vehicle accidents under low illumination conditions are frequent and serious, and they have attracted widespread attention. The objective of this study was to explore how various factors affect night-time vehicle accidents using data collected from a city in China. Combined with logistic model theory, the occurrence or absence of a night-time fatal accident was

set as the dependent variable. A total of 10 variables, including the accident site, road type and road surface conditions, were selected as independent factors. Based on 2106 valid night-time vehicle accidents, a binomial logistic model was established to evaluate the impact of contributing factors on the severity of these accidents. The results show that the accident site, accident type and presence of a median divider are important factors that affect the severity of night-time vehicle accidents under low illumination conditions. The probability of fatal night-time accidents on road segments is 2.387 times that at intersections. The probabilities of fatal single-vehicle and vehicle-pedestrian night-time accidents are also greater than that of fatal vehicle-vehicle night-time accidents, by factors of 7.591 and 1.749, respectively. The probability of fatal night-time accidents on roads with median dividers is 3.273 times greater than that on roads without median dividers.

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语言: English

文献类型: Article

作者关键词: Traffic safety; night-time vehicle accidents; logistic model; accident severity; factor

KeyWords Plus: INJURY SEVERITY; LOGISTIC-REGRESSION; DRIVERS; CRASHES; SAFETY

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第 8 条，共 17 条

标题: Effects of Different Intervention Methods on Novice Drivers' Speeding

作者: Niu, SF (Niu, Shi Feng); Liu, YJ (Liu, Yan Jun); Wang, L (Wang, Lin); Li, HQ (Li, Hai Qin)

来源出版物: SUSTAINABILITY 卷: 11 期: 4 文献号: 1168 DOI: 10.3390/su11041168 出版年: FEB 2 2019

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摘要: The objective of this work is to examine the human response to different interventions to determine its direct intervention effect and education effect on the speeding of novice drivers. Several experiments, in which participants received different interventions when they were speeding, were conducted on the simulating driving system. The direct intervention effect of different intervention methods was measured by speed reduction and the education effect of voice intervention was measured by questionnaires. A total of 60 novice drivers and 20 experienced drivers were involved in this study, and the personality, gender and driving experience were considered in the analysis. We found that the steer wheel vibration has a significant influence on the intervention effect, but the lighting does not. The driving experience has more impact on the intervention effect of voice intervention with the Rational Style. While gender mainly influences the intervention effect of Emotional Style. The education effect of voice intervention designed with Emotional Style performs better than Rational Style. The personality from Eysenck Personality Questionnaire (EPQ) does not have a significant influence on the intervention effect. At last, a new driving style variable which can be calculated automatically from driving data was designed and the novel intervention strategy was proposed according to the research results. Our research provides a novel intervention strategy for drivers' speeding behavior and gives an underlying insight into urban traffic safety, which is beneficial to ensure the safety, efficiency, and sustainability of the transportation system. It also serves as a reference for traffic safety research management agencies, the government, and the produced smart vehicles companies, providing guidance not limited to speeding intervention and aimed at improving other unsafe driving behavior.

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语言: English

文献类型: Article

作者关键词: traffic safety; speeding; novice drivers; intervention effect

KeyWords Plus: BEHAVIOR; WORK

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第 9 条，共 17 条

标题: ADAS Acceptability Improvement Based on Self-Learning of Individual Driving Characteristics: A Case Study of Lane Change Warning System

作者: Sun, QY (Sun, Qinyu); Zhang, HJ (Zhang, Hongjia); Li, Z (Li, Zhen); Wang, C (Wang, Chang); Du, K (Du, Kang)

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摘要: Low user acceptance is one of the fundamental problems for popularizing advanced driver assistance systems (ADAS). Systems that are developed for the majority of drivers have to possess stationary characteristics and be conservative for safety reasons. However, the drivers with disparate driving styles possess different risk cognition of lane change behavior; therefore, such systems with stationary characteristics may cause frequent interference to aggressive drivers or may be perceived as a radical system by conservative drivers. An ADAS that adapts to the characteristics of individual drivers during lane change maneuvers will be more effective and more acceptable to drivers. In this study, we developed an adaptive algorithm that learns the characteristics of individual drivers during lane changes and determines the optimal threshold online to adapt to different drivers. Signal detection theory (SDT) was employed and the results of the accuracy, false negative rate, and false positive rate were used to capture the drivers' lane change behavior characteristics. A learning stage and a threshold fluctuation stage were designed in the adaptive algorithm to determine the optimal warning threshold and amended the optimal

warning threshold based on changes in the drivers' behaviors. We evaluated the proposed algorithm by conducting the actual vehicle tests with a total of three participants. The offline statistical analysis results of the participants' lane change characteristics were compared with the online results of the warning threshold adjustments from the adaptive algorithm; the comparison results indicated that the adaptive algorithm could effectively capture the drivers' lane change characteristics and determine an appropriate warning threshold. The findings provide an improvement in the performance of the lane change warning (LCW) system and enhance people's acceptance of intelligent systems.

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语言: English

文献类型: Article

作者关键词: Self-learning; lane change characteristics; lane change warning system; signal detection theory

KeyWords Plus: ADVANCED DRIVER ASSISTANCE; STYLE; MODEL; AID

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第 10 条，共 17 条

标题: Lane change safety assessment of coaches in naturalistic driving state

作者: Wang, C (Wang, Chang); Li, Z (Li, Zhen); Fu, R (Fu, Rui); Zhang, MF (Zhang, Mingfang); Sun, QY (Sun, Qinyu)

来源出版物: SAFETY SCIENCE 卷: 119 页: 126-132 DOI: 10.1016/j.ssci.2018.09.009 出版

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摘要: The lane change behavior of coaches is more significant than other vehicles. We propose a new lane change safety identification model for coaches by considering the following behaviors during lane change. Naturalistic lane change data for coaches were collected by several sensors in an instrumented vehicle using a dynamic observation method. After discussing the lane change characteristics of coaches, a lane change safety model was established and examined using collected naturalistic data. The results showed that: (1) the average lane change duration was approximately 10.0 s, which is significantly higher than that of a car, 6.3 s; (2) coach drivers anticipate that lateral velocity during a lane change is stable at different velocities; and (3) lane change is similar to vehicle following behavior, considering longitudinal motion. Based on the lane change safety judge model proposed by Hussein Jula, 0.6 s time-headway (THW) was used to represent the longitudinal control behavior of coach drivers in the lane change safety model. Compared with ISO 17387 and other criteria, our model has significant advantages in the accurate identification rate of lane change safety, achieving 92.9%, 92.2% and 98.2% with 3 types of surrounding vehicles.

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语言: English

文献类型: Article

作者关键词: Coaches; Naturalistic driving; Lane change; Safety identification

KeyWords Plus: COLLISION; DRIVERS; BEHAVIOR; TIME

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第 11 条，共 17 条
标题: What is the difference in driver's lateral control ability during naturalistic distracted driving and normal driving? A case study on a real highway
作者: Wang, C (Wang, Chang); Li, Z (Li, Zhen); Fu, R (Fu, Rui); Guo, YS (Guo, Yingshi); Yuan, W (Yuan, Wei)
来源出版物: ACCIDENT ANALYSIS AND PREVENTION 卷: 125 页: 98-105 DOI: 10.1016/j.aap.2019.01.030 出版年: APR 2019
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摘要: Driver distraction is widely recognized as a major contributor to traffic crashes. Although the effect of distraction on simulated driving performance has been studied extensively, comparatively little research based on field tests has been performed on the effects of high driving speeds on lateral driving performance during naturalistic distraction (the driver was unaware of the research topic). In this study, an instrumented vehicle is used to examine the impact of speed and naturalistic visual distraction (rear vehicle's velocity and relative distance estimation) on a driver's ability to keep in the lane. Similar to results from previous studies, visual distraction resulted in an impaired ability to keep in a lane compared to normal driving. Further investigation of steering control parameters showed an increase in steering wheel reversal rates (SRRs at 1.3 degrees and 2.5 degrees levels) and the standard deviation of steering wheel acceleration (SDSWA). The results of this study indicated that the standard deviation of lane positioning (SDLP) and trajectory offset (TO) increased as speed increased. As speed increased, the growth rates of SDLP and TO in the visual distraction task were the same as that in normal driving. Moreover, the SRRs and steering wheel acceleration (SWA) decreased with increased speed. As speed increased, the growth rates of SRRs and SWA during a visual distraction task were the same as that during normal driving. These results suggest that driving speed has a similar effect on driving performance during both distracted driving and normal driving.
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语言: English
文献类型: Article
作者关键词: Distraction; Lateral performance; Field test; Driving speed
KeyWords Plus: COGNITIVE DISTRACTION; CELL PHONE; PERFORMANCE; VEHICLE; SIMULATOR; WORKLOAD; CAPACITY; TALKING; RISK; LOAD
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第 12 条，共 17 条
标题: Analysis of truck-related crashes of freeways in China
作者: Xu, T (Xu, Ting); Jiang, RS (Jiang, Rui-sen); Zhao, L (Zhao, Lei); Qi, L (Qi, Long); Zhang, Y (Zhang, Yu)
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摘要: Truck-related crashes result in tremendous lives and property loss and become a serious safety issue in China. The goal of this article is to identify the influential factors for severity of truck-related crashes using data from Jingjintang freeways in China and to design an ordered probit model to explore their relationship. Records including crashes, traffic flow attributes, and geometric design features ranging from 2009 to 2012 were collected from Jingjintang freeway. Crashes are divided into three severity levels: slight injury, injury, and fatal injury. The injury crashes is ranking the first place occupying 64.37%. Truck-related crashes are likely to occur when truck percentage is around 20% and 80%. The speed of traffic flow decreases with the more

appearance of trucks. The ordered probit model is developed to estimate the impacts of influential factors on injury severity of truck-related crashes. Marginal effects for each level of injury severity are calculated. The results reveal that truck-involving crashes are highly sensitive to factors such as time of day, truck percentage, average slope, operating speed, speed difference, and exposure variable. The average slope of road segment and speed gaps has the greatest impact on all severity levels of crashes.

入藏号: WOS:000460991200001

语言: English

文献类型: Article

作者关键词: Truck-related crashes; crash severity; ordered probit model; marginal effect

KeyWords Plus: REGRESSION-MODEL; INJURY SEVERITY; PREDICTION; TIME

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第 13 条，共 17 条

标题: The Hybrid Model for Lane-Changing Detection at Freeway Off-Ramps Using Naturalistic Driving Trajectories

作者: Xu, T (Xu, Ting); Wen, CL (Wen, Changlei); Zhao, L (Zhao, Lei); Liu, MJ (Liu, Meijun); Zhang, X (Zhang, Xiang)

来源出版物: IEEE ACCESS 卷: 7 页: 103716-103726 DOI: 10.1109/ACCESS.2019.2932013 出版年: 2019

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摘要: In order to promote traffic safety at freeway off-ramps, this paper designed a hybrid model

to identify a lane-changing with vision technology. The unmanned aerial vehicle was used to collect video stream data at five off-ramps for Xi'an Raocheng freeway during weekdays. The positional information-of-an individual vehicle is recorded at a frequency of 5 Hz. Each trajectory is composed of 30 positional records and all trajectories are divided into lane-changing and lane-keeping units. Features such as lateral driving speed, lane departure, and the lane deviation angle extracted from trajectory records are related to the lane-changing behaviors. We develop a hybrid model of the Gaussian Mixture Model and the Continuous Hidden Markov Model to identify lane-changing behaviors at off-ramps with these features. Basing on test set, we conduct a test for the hybrid model and the result shows that the prediction accuracy of the proposed model is as high as 94.4% for lane-changing behavior and 93.6% for lane-keeping behavior.

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语言: English

文献类型: Article

作者关键词: Continuous Hidden Markov Model; freeway off-ramps; hybrid model; lane-changing; naturalistic driving trajectories

KeyWords Plus: PERFORMANCE; PREDICTION; BEHAVIOR

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第 14 条，共 17 条

标题: Driving risk assessment using driving behavior data under continuous tunnel environment

作者: Yan, Y (Yan, Ying); Dai, YH (Dai, Youhua); Li, XD (Li, Xiaodong); Tang, JJ (Tang, Jinjun); Guo, ZY (Guo, Zhongyin)

来源出版物: TRAFFIC INJURY PREVENTION DOI: 10.1080/15389588.2019.1675154 提前

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摘要: Objective: Driving behavior is the key feature for determining the nature of traffic stream qualities and reflecting the risk of operating environments. However, evaluating the driving risk accurately and practically in continuous tunnels (tunnels with a space more than 250 m and less than 1000 m) still faces severe challenges due to the complex driving conditions. The objective of this study is to predict the driving risk indicators and determine different risk levels. Methods: The naturalistic driving system equipped with a road environment and driving behavior data acquisition system combined with the fixed-point test method was used for data collection in 130 tunnels on four highways. A traditional AASHTO braking model and convex hull algorithm were adopted to predict the critical safety speed and the critical time headway of each risk feature point in tunnels. According to the risk constraints under free-flow, car-following and lane-changing conditions, the average traffic flow risk index (TFRI) representing six risk levels and the safety threshold of the corresponding risk indicators were determined. Results: The findings of this study revealed that the critical safety speed at nighttime is slower than in other daytime conditions in continuous tunnels. The time headway slightly changes under 90 km/h. As the speed continues to increase, speed has a significant influence on the critical time headway. The only reliable interaction involved the different adverse weather conditions on the mean critical safety speed in the continuous tunnels (short plus long) ($F = 9.730$, p0.05) and single long tunnels ($F = 12.365$, p0.05). Conclusions: It can be concluded that driving behaviors significantly vary in different tunnel risk feature points and the combined effect of high speed and luminance variation may result in high driving risk. The performance validation indicted that the risk assessment level determined by the proposed approach is consistent with the real safety situations. The study provides an effective and generally acceptable method for identifying driving risk criteria that can also be applied for traffic management and safety countermeasures with a view to possible implementation in continuous tunnels.
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作者关键词: Driving behavior; risk assessment; continuous tunnels; critical safety speed; time headway
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第 15 条，共 17 条

标题: Evacuation Strategy Optimization Study Based on System Theory

作者: Yuan, H (Yuan, Hu); Wang, RX (Wang, Ruixi); Zhang, X (Zhang, Xiao); Hu, YQ (Hu, Yueqi); Zhang, F (Zhang, Fan); Zhu, T (Zhu, Tong); Liu, HX (Liu, Haoxue)

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摘要: Emergency evacuation is to transfer people from dangerous places to safe areas, so as to reduce or even avoid the potential harm to people. It is inherently a comprehensive system composed of evacuation managers, evacuees, road networks, shelters, etc. Security is one of the important indicators of such system. Moreover, in order to ensure the normal and efficient operation of evacuation system, each component should cooperate well with each other, thus making stability another important index of the evacuation system. In order to optimize evacuation safety, some residential areas may be arranged to stay much longer which is hard to be accepted, namely, the stability of evacuation system is low. In this paper, a system-based evacuation CSO model at residential level is proposed which compromises the security and stability of evacuation systems. The CSO model is a bi-level network optimization model, the upper level aims at minimizing the total risk of evacuation subject to the residential tolerance level and the lower level conveys a cell transmission-based dynamic traffic assignment problem. Using our model, we also study the impact of the number of shelters, the organizational form of road intersections, the uncertainty of evacuation demand and risk distribution on evacuation system.

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语言: English

文献类型: Article

作者关键词: Evacuation management; system theory; constrained system optimal; dynamic traffic assignment; cell transmission model

KeyWords Plus: TRAFFIC MANAGEMENT; MODEL; SIMULATION; FLOWS; CITY; ASSIGNMENT; NETWORKS; BEHAVIOR; PLANS

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第 16 条，共 17 条

标题: The Impact of Cognitive Distraction on Driver Perception Response Time Under Different Levels of Situational Urgency

作者: Zhang, Z (Zhang, Zhi); Guo, YS (Guo, Yingshi); Yuan, W (Yuan, Wei); Wang, C (Wang, Chang)

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摘 要: Identifying drivers' perception response time (PRT) is of utmost importance for the development of rear-end collision alarm systems. However, the effects of cognitive distraction on PRT under different levels of situational urgency are unclear. Therefore, the purpose of this study was to quantify and compare the effects of cognitive distraction for both high and low situational urgency. Participants (N = 45) were presented with a simulated car-follow scenario. The effects on both perception time and movement time were analyzed separately under headways of 1.5s and 2.5s using the Bayes factor approach, and a mixed-effects model was constructed to calculate the magnitude and significance of effects of cognitive distraction and situational urgency on PRT. The results revealed (1) the effect on perception time was smaller in the high situational urgency condition, and a high probability of distraction-related delay on perception time was found in both high (BF10 = 15.588) and low (BF10 = 23.203) situational urgency conditions; (2) the effect on movement time was larger in the high situational urgency condition, and the delay of movement time was more likely to occur in the high (BF10 = 19.642) situational urgency condition than in the low (BF10 = 0.493) situational urgency condition; (3) cognitive distraction increased driver's PRT by 1.556s, the average of drivers' PRT decreased by 0.241s for every is reduction in initial time headway. The results are beneficial for designing the lead time and the frequency of warning or intervention in rear-end collision alarm systems.

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语言: English
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作者关键词: Distraction; perception response time; rear-end collision; situational urgency
KeyWords Plus: ATTENTION; TASK

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第 17 条，共 17 条
标题: Identification of driver's braking intention based on a hybrid model of GHMM and GGAP-RBFNN
作者: Zhao, X (Zhao, Xuan); Wang, S (Wang, Shu); Ma, J (Ma, Jian); Yu, Q (Yu, Qiang); Gao, Q (Gao, Qiang); Yu, M (Yu, Man)
来源出版物: NEURAL COMPUTING & APPLICATIONS 卷: 31 特刊: SI 页: 161-174 DOI: 10.1007/s00521-018-3672-1 增刊: 1 出版年: JAN 2019
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摘要: Driving intention has been widely used in intelligent driver assistance systems, automated driving systems, and electric vehicle control strategies. The accuracy, practicality, and timeliness of the driving intention identification model are its key issues. In this paper, a novel driver's braking intention identification model based on the Gaussian mixture-hidden Markov model (GHMM) and generalized growing and pruning radial basis function neural network (GGAP-RBFNN) is proposed to improve the identification accuracy of the model. The simplest brake pedal and vehicle speed data that are easily obtained from the vehicle are used as an observation sequence to improve practicality of the model. The data of the pressing brake pedal stage are used to identify the braking intention to improve the timeliness of the model. The experimental data collected from real vehicle tests are used for off-line training and online identification. The research results show that the accuracy of driver's braking intention identification model based on the GHMM/GGAP-RBFNN hybrid model is 94.69% for normal braking and 95.57% for slight braking, which are, respectively, 26.55% and 17.72% higher than achieved by the GHMM. In addition, the data of the pressing brake pedal stage are used for intention identification, which is 1.2s faster than that of the existing identification model based on the GHMM.
入藏号: WOS:000465453100015
语言: English
文献类型: Article
作者关键词: Braking intention identification; Gaussian mixture-hidden Markov model (GHMM); Generalized growing and pruning radial basis function neural network (GGAP-RBFNN); Advanced driver assistance system (ADAS)
KeyWords Plus: EMERGENCY BRAKING; ALGORITHM; VEHICLE; DESIGN; SAFETY; TRANSMISSION; PREDICTION; BEHAVIOR; CRASHES; SYSTEMS
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建筑学院

第 1 条，共 6 条
标题: Tourists' Thermal Experience and Health in a Commercial Pedestrianized Block: A Case Study in a Hot and Humid Region of Southern China
作者: Zhang, L (Zhang, Lei); Ma, X (Ma, Xuan); Zhao, JY (Zhao, Jingyuan); Wang, MY (Wang, Mengying)
来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH 卷: 16 期: 24 文献号: 5072 DOI: 10.3390/ijerph16245072 出版年: DEC 2 2019
Web of Science 核心合集中的"被引频次": 1
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使用次数 (最近 180 天): 0
使用次数 (2013 年至今): 4
引用的参考文献数: 45
摘要: With the development of the economy in China, the tourism industry has become a form of daily entertainment for citizens. Commercial pedestrianized blocks have been designed as recreational centers for tourists, serving as outdoor public space and scenic spots. The use of these regions is directly determined by the outdoor thermal environment. So far, few studies have been conducted on tourists' thermal experience in commercial pedestrianized blocks, especially in the hot and humid region of southern China. Using field measurement and numerical simulation of a commercial pedestrianized block in Fo Shan, China, to research tourists' thermal experience under different conditions, the final results of this study could help to select the most suitable time for tourist travel and help local managers to improve the thermal environment.
入藏号: WOS:000507312700189
PubMed ID: 31842325
语言: English
文献类型: Article

作者关键词: commercial pedestrianized block; outdoor thermal calendar; field measurement; numerical simulation

KeyWords Plus: GREEN ROOFS; COMFORT; TEMPERATURE; IMPACT; PERFORMANCE; CLIMATE; INDEX; OUTDOOR

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第 2 条，共 6 条

标题: Identification of low-carbon travel block based on GIS hotspot analysis using spatial distribution learning algorithm

作者: Hou, QH (Hou, Quanhua); Zhang, X (Zhang, Xuan); Li, B (Li, Bo); Zhang, XQ (Zhang, Xiaoqing); Wang, WH (Wang, Wenhui)

来源出版物: NEURAL COMPUTING & APPLICATIONS 卷: 31 期: 9 特刊: SI 页: 4703-4713 DOI: 10.1007/s00521-018-3447-8 出版年: SEP 2019

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使用次数 (最近 180 天): 6

使用次数 (2013 年至今): 18

引用的参考文献数: 27

摘要: In the future, big data will become an efficient and useful means for improving urban planning, and machine learning can take city as a simplified and efficient system. We take full advantage of the benefits of new technology, but also clarify that city is not a machine, also cannot fully mechanically control the urban development. This study presents a methodology for identifying low-carbon travel block, which can be used to identify the built environment conducive to residents' low-carbon travel. We chose the four elements of traffic survey-travel mode, travel time, travel purpose and travel frequency-as the framework to evaluate travel carbon emissions. Using the index data collected from "WeChat," a popular social-media platform in China and questionnaire surveys, we conducted hotspot analysis of the spatial distribution of

travel carbon emissions in GIS. We obtained a comprehensive carbon emissions and its spatial distribution through the superposition of hotspot density surface of different indexes. The results show that E block within the research area has the lowest travel carbon emissions. These results suggest some planning implications from three aspects-land use mode, road network and public service facilities: In the old urban district of Pucheng, the ratio of residential building area and other types' building area should be "4:1-3:1"; and we should develop the travel model of bicycle, and the interval of bicycle lanes should be 350-450 m; The ratio of walking road to total road area should be 15-20%, and the width of road should be restricted. Coverage of transit site buffered for the radius of 150 m is 40-50%, coverage of shopping services buffered for the radius of 50 m is 45-60%, and coverage of recreational facilities buffered for the radius of 100 m is 50-70%. The results confirm that "functional mixing" and "dense road network" are beneficial to residents' low-carbon travel proposed by the predecessors. At the same time, we found that not the higher volume rate is, the more favorable for low-carbon travel. Small cities have limited number of population and scattered distribution of professional posts, which are not suitable for the traditional mode of improving the volume ratio and the bus system. It is not that the higher the bus station coverage is, the better for residents to travel as low-carbon, and the high popularity of public transportation in small cities will increase the carbon emission of residents. The study provides a new way to evaluate the carbon emission assessment of blocks and provides a basis for block planning with low-carbon concept.

入藏号: WOS:000488645700021

语言: English

文献类型: Article

作者关键词: Low-carbon travel; Built environment; GIS hotspot analysis; Block

KeyWords Plus: BUILT ENVIRONMENT; BEHAVIOR; CHOICE

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第 3 条，共 6 条

标题: Optimized Public Parking Location Modelling for Green Intelligent Transportation System Using Genetic Algorithms

作者: Shen, T (Shen, Tong); Hua, K (Hua, Kun); Liu, JP (Liu, Jiaping)

来源出版物: IEEE ACCESS 卷: 7 页: 176870-176883 DOI: 10.1109/ACCESS.2019.2957803 出版年: 2019

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使用次数 (最近 180 天): 3

使用次数 (2013 年至今): 4

引用的参考文献数: 53

摘要: This paper proposes an optimal parking site selection scheme to alleviate CO2 emissions of the traffic flows for green urban road networks. Through the creative dynamic traffic zone programming, a constrained optimization model is set up to assess the impact of potential public parking locations on road traffic emissions. In each scenario, Thiessen Polygon based zoning method is applied to investigate the distributions of road traffics. The main contribution of this study is as follows. Firstly, this proposed model takes the CO2 emission of the whole traffic network of sustainable city development as the optimization goal, instead of the traditionally discussed travel distance or cost efficiency. Secondly, a Thiessen polygon based public parking zoning method is developed and implemented realistically. This zoning method provides a precise approach to traffic distribution and parking demand estimation. Rather than the quadrilateral or radial zoning, this method pays more attention to the parking supply demand and its impact on parking congestion. Thirdly, the genetic algorithm (GA) is used to find the optimal public parking location (PPL) sets. GA has a great application value in speeding up stochastic search for global optimization. It is especially suitable to simulate complex and large capacity problems concerning the realistic solutions. By implementing the dynamic zoning and modelling method into intelligent transportation system (ITS), the efficiency of parking induction and dynamic optimization of traffic distribution could be ensured for the future smart mobility. Therefore, this model not only serves as a novel method for public parking allocations, but hold potential to support intelligent parking guidance, as a part of the intelligent traffic system for smart city development.

入藏号: WOS:000509405300036

语言: English

文献类型: Article

作者关键词: Parking allocation model; congestion management; green intelligent transportation system; genetic algorithm; optimization

KeyWords Plus: DOWNTOWN PARKING; SITE SELECTION; CONGESTION; CONSUMPTION; EMISSIONS; CHOICE

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第 4 条，共 6 条
标题: Spatial optimization mode of China's rural settlements based on quality-of-life theory
作者: Xu, J (Xu Juan); Ma, HT (Ma Hongtu); Luo, J (Luo Jing); Huo, XP (Huo Xiaoping); Yao, XB (Yao Xingbo); Yang, SM (Yang Simin)
来源出版物: ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH 卷: 26 期: 14 页: 13854-13866 DOI: 10.1007/s11356-018-3775-3 出版年: MAY 2019
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使用次数 (最近 180 天): 10
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引用的参考文献数: 55
摘要: This paper studies the optimization mode of the spatial organization of rural settlements based on the two-way interactive mechanism between the space of rural settlements and quality-of-life theory. It examines three main aspects: the integration of spatial function, the optimization of spatial structure, and the regulation of spatial scale. In this paper, we built an optimization mode and framework of spatial organization, called the road-oriented mode of rural settlements, based on quality-of-life theory. We systematically analyzed the mode's conceptual connotation, construction principles, frame, type, and spatial scale. At the same time, this paper realized the reasonable proportion and optimized combination of internal spatial type in settlements and focused on a reasonably sized scale of a single settlement and the distance scale between settlements. Our findings can be used as insight into the theoretical development of the spatial structure of rural areas. Results also provide a scientific basis for future spatial optimization and integration of rural settlements to improve quality of life.
入藏号: WOS:000466906000020
PubMed ID: 30488248
语言: English
文献类型: Article
作者关键词: Rural settlements; Spatial optimization mode; Life quality; Road-oriented; Spatial scale; Urbanization

KeyWords Plus: LAND-USE; EQUALIZED DEVELOPMENT; VILLAGE; TRANSFORMATION; RESETTLEMENT; TRANSITION; PROVINCE; PATTERN; CITY

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第 5 条，共 6 条

标题: Spatial Characteristics of Population Activities in Suburban Villages Based on Cellphone Signaling Analysis

作者: Zhou, JZ (Zhou, Jizhe); Hou, QH (Hou, Quanhua); Dong, WT (Dong, Wentao)

来源出版物: SUSTAINABILITY 卷: 11 期: 7 文献号: 2159 DOI: 10.3390/su11072159 出版年: APR 1 2019

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摘要: There are frequent population flow and complex spatial structures in suburban villages. Understanding the spatial characteristics of population activities in suburban villages helps to coordinate the relationship between urban and rural areas and guide the development of suburban villages and the formulation of sound policies. Taking the rural area of Qin and Han New City as the research object, this paper constructs a population time-space analysis framework of population attribute-activity characteristics-spatial analysis based on cellphone signaling data. According to the characteristics of the population activity curve, K-means clustering algorithm was used to classify rural space and analyze their characteristics. This study has shown that migrants, who are showed as young and energetic, account for 49.8% of the local registered population per day. Bidirectional flow of residents and commuters is generally presented in urban and rural areas. The urban-rural relation curve was characterized by double peaks. The changes in the population in each village and the

intensity of urban-rural relation were affected by location, industry and land use. The village population activity curve was classified into three categories, and nine characteristic villages are formed combined with the activity function. The research results can provide a scientific basis for urban and rural planning, spatial planning, industrial guidance and the facility layout.

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语言: English

文献类型: Article

作者关键词: suburban villages; cellphone signaling data; population activity; spatial characteristics

KeyWords Plus: LAND-USE; URBANIZATION; PATTERN; CITIES; GROWTH; CHINA

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ISO 来源出版物缩写: Sustainability

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第 6 条，共 6 条

标题: Village-Town System in Suburban Areas Based on Cellphone Signaling Mining and Network Hierarchy Structure Analysis

作者: Zhou, JZ (Zhou, Ji-Zhe); Hou, QH (Hou, Quan-Hua); Fan, XY (Fan, Xiao-Yang); Du, Y (Du, Yang)

来源出版物: IEEE ACCESS 卷: 7 页: 128579-128592 DOI: 10.1109/ACCESS.2019.2939504 出版年: 2019

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摘要: Suburban villages are strongly influenced by cities. Understanding the relationship between urban and rural as well as the hierarchy of villages contributes to optimizing the structure of village-town, allocating resources effectively as well as coordinating the relationship between urban and rural areas. Taking the rural area of Qin and Han New City as the research object, this paper obtained the number of contact flows between urban and rural areas from cellphone signaling data mining and constructed a network with hierarchical system. The influence scope and hierarchy of city and village nodes in the network could be measured by conducting the primary linkage analysis. The effect intensity and radius of the central villages as well as the relationship between villages could be calculated by the multiple linkage analysis. Furthermore, according to the urbanization potential and the characteristic regions of cites, the regional village-town system could befinally determined. This study has shown that 89.4% of the villages were influenced by the surrounding cities strongly, and the influence range of the cities was 6.2-28.3km. There were 13 "Centrality" villages in this region, which was lean to city, traffic convenience and divisional centralized. Totally, 19 groups of villages should be merged and 3 groups should be developed together. Besides, two kinds of village-town systems were formed in this region, and the villages were classified into five categories for guidance. Moreover, the research results could not only provide a helpful method to determine the village-town system structure under the strong influence of cities but also offer a better way for resources allocation between urban and rural smartly and equally.

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语言: English

文献类型: Article

作者关键词: Suburban villages; cellphone signaling data; contact flow; village-town system

KeyWords Plus: LAND-USE; RURAL-DEVELOPMENT; AIR PASSENGER; TOURISM; GROWTH; CHINA; CONSOLIDATION; URBANIZATION; IMPACT; SPACES

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环境科学与工程学院

第 1 条，共 5 条

标题: An Inexact Optimization Model for Crop Area Under Multiple Uncertainties
作者: Ren, CF (Ren, Chongfeng); Zhang, HB (Zhang, Hongbo)
来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH **卷:** 16 **期:** 14 **文献号:** 2610 **DOI:** 10.3390/ijerph16142610 **出版年:** JUL 2 2019
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引用的参考文献数: 42
摘要: This paper developed a type-2 fuzzy interval chance constrained programming model for optimizing a crop area, which integrated chance constrained programming and type-2 fuzzy interval programming. The developed model was then applied to a case study in Wuwei City, Gansu Province, China, and the maximization of economic benefit was selected as the planning objective. Furthermore, different water-saving irrigation modes were considered as the development mode. A series of optimal irrigation water and planting structure schemes were obtained under different violation probabilities in each water-saving scenario. The obtained results could be helpful to make decisions on the planting structure and the optimal use of irrigation water and land resources under multiple uncertainties.
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PubMed ID: 31336673
语言: English
文献类型: Article
作者关键词: crop area optimization; multiple uncertainties; chance constrained programming; type-2 fuzzy interval programming; water-saving scenarios
KeyWords Plus: IRRIGATION WATER ALLOCATION; PROGRAMMING-MODEL; RESOURCES MANAGEMENT; AGRICULTURAL WATER; DECISION-MAKING; FARM INCOME; LAND; SIMULATION; CRITERIA; ENERGY
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作者: Jia, H (Jia, Hui); Qian, H (Qian, Hui); Qu, WG (Qu, Wengang); Zheng, L (Zheng, Le); Feng, WW (Feng, Wenwen); Ren, WH (Ren, Wenhao)
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摘要: Fluoride hydrogeochemistry and associated human health risks implications are investigated in several aquifers along the southern edge of the Chinese Loess Plateau. Locally, 64% shallow groundwater samples in loess aquifer exceed the fluoride limit (1.5 mg/L) with the maximum of 3.8 mg/L. Presently, the shallow groundwater is the main source of private wells for domestic use, and this is clearly a potential risk for human health. Hydrogeochemistry and stable isotopes are used to elucidate the diversity of occurrence mechanisms. Enrichment of fluoride in groundwater is largely controlled by the F-containing minerals dissolution. Furthermore, alkaline condition and calcium-removing processes promote water-rock interactions. Stable isotopes of hydrogen and oxygen (D and O-18) in study area waters demonstrate that groundwater in loess aquifer is old, which means groundwater remains in the aquifer for a long time. Long residence time induces sufficient water-rock interactions, which play significant roles in the resolution of fluoride minerals. Samples from the shallow loess aquifer show elevated fluoride levels, which may pose human health risk for both adults (60%) and children (94%) via oral intake. To ensure drinking water safety, management measures such as popularizing fluoride-removing techniques and optimizing water supply strategies need to be implemented.
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PubMed ID: 31091741

语言: English

文献类型: Article

作者关键词: high fluoride groundwater; drinking water safety; mechanism; hydrogeochemistry; human health risk assessment; loess aquifer

KeyWords Plus: FLUORIFEROUS GROUNDWATERS; GEOCHEMICAL CONTROLS; SHALLOW GROUNDWATER; SHAANXI PROVINCE; BASIN; AQUIFER; CONTAMINATION; ENRICHMENT; FLUOROSIS; ISOTOPES

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第 3 条，共 5 条

标题: Hydrogeochemical Characterization and Irrigation Quality Assessment of Shallow Groundwater in the Central-Western Guanzhong Basin, China

作者: Xu, PP (Xu, Panpan); Feng, WW (Feng, Wenwen); Qian, H (Qian, Hui); Zhang, QY

(Zhang, Qiying)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH **卷:** 16 **期:** 9 **文献号:** 1492 **DOI:** 10.3390/ijerph16091492 **出版年:** MAY 1 2019

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摘要: Groundwater is the major water resource for the agricultural development of the Guanzhong Basin, China. In this study, a total of 97 groundwater samples (51 from the North Bank of the Wei River (NBWR) and 46 from the South Bank of the Wei River (SBWR)) were collected from the central-western Guanzhong Basin. The aim of this study was to investigate the hydrogeochemical characteristics of the basin and to determine the suitability of shallow groundwater for irrigation. The groundwater of the entire study area is alkaline. The groundwater of the SBWR is fresh water, and the NBWR groundwater is either freshwater or brackish water. The average concentration of ions (except for Ca2+) in SBWR samples is lower than in NBWR samples. HCO3- is dominant in the groundwater of the study area. Ca2+ is dominant in the SBWR while Na+ is dominant in the NBWR. The SBWR groundwater is mainly of the HCO3-Ca.Mgtype and has undergone the main hydrogeochemical processes of rock weathering-leaching. The hydrochemical facies of the majority of the NBWR groundwater samples are the HCO3-Na type with several minor hydrochemical facies of the HCO3-Ca.Mg, SO4.Cl-Na, and SO4.Cl-Ca.Mg types. Its chemistry is mainly controlled by rock weathering, cation exchange, and evaporation. Salinity hazard, sodium percentage, sodium adsorption ratio, residual sodium carbonate, magnesium hazard, permeability index, Kelley's ratio, potential salinity, synthetic harmful coefficient, and irrigation coefficient were assessed to evaluate the irrigation quality of groundwater. The results of the comprehensive consideration of these indicators indicate that the percentage of NBWR water samples suitable for irrigation purposes ranges between 15.7% and 100% at an average level of 56.7%. Of the SBWR water samples suitable for irrigation, the percentage ranges from 78.3% to 100% with an average of 91.8%. Land irrigated with such water will not be exposed to any alkali hazard, but will suffer from a salinity hazard, which is more severe in the NBWR. Thus, most of the water in the NBWR can be used for soils with good drainage conditions which control salinity.

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PubMed ID: 31035576

语言: English

文献类型: Article

作者关键词: groundwater; hydrogeochemistry; quality assessment; irrigation; Guanzhong Basin

KeyWords Plus: MAJOR ION CHEMISTRY; RIVER-BASIN; DRINKING PURPOSES; ALLUVIAL AQUIFER; SURFACE-WATER; HEALTH-RISK; TAMIL-NADU; SUITABILITY; DISTRICT; INDEX

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第 4 条，共 5 条

标题: A Cross-Reconstruction Method for Step-Changed Runoff Series to Implement Frequency Analysis under Changing Environment

作者: Yang, JT (Yang, Jiantao); Zhang, HB (Zhang, Hongbo); Ren, CF (Ren, Chongfeng); Nan, ZN (Nan, Zhengnian); Wei, XW (Wei, Xiaowei); Li, C (Li, Ci)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH **卷:** 16 **期:** 22 **文献号:** 4345 **DOI:** 10.3390/ijerph16224345 **出版年:** NOV 2019
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引用的参考文献数: 38

摘要: The stationarity of observed hydrological series has been broken or destroyed in many areas worldwide due to changing environments, causing hydrologic designs under stationarity assumption to be questioned and placing designed projects under threat. This paper proposed a data expansion approach-namely, the cross-reconstruction (CR) method-for frequency analysis for a step-changed runoff series combined with the empirical mode decomposition (EMD) method. The purpose is to expand the small data on each step to meet the requirements of data capacity for frequency analysis and to provide more reliable statistics within a stepped runoff series. Taking runoff records at three gauges in western China as examples, the results showed that the cross-reconstruction method has the advantage of data expansion of the small sample runoff data, and the expanded runoff data at steps can meet the data capacity requirements for frequency analysis. In addition, the comparison of the expanded and measured data at steps indicated that the expanded data can demonstrate the statistics closer to the potential data population, rather than just reflecting the measured data. Therefore, it is considered that the CR method ought to be available in frequency analysis for step-changed records, can be used as a tool to construct the hydrological probability distribution under different levels of changing environments (at different steps) through data expansion, and can further assist policy-making in water resources management in the future.

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语言: English

文献类型: Article

作者关键词: hydrology; data expansion; stationarity; EMD; frequency analysis; environmental change

KeyWords Plus: WEI RIVER-BASIN; WATER; STREAMFLOW; PRECIPITATION; STATIONARITY; PATTERNS; CLIMATE; EVENTS; TRENDS

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第 5 条，共 5 条
标题: Assessment of Groundwater Quality and Human Health Risk (HHR) Evaluation of Nitrate in the Central-Western Guanzhong Basin, China
作者: Zhang, QY (Zhang, Qiying); Xu, PP (Xu, Panpan); Qian, H (Qian, Hui)
来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH **卷:** 16 **期:** 21 **文献号:** 4246 **DOI:** 10.3390/ijerph16214246 **出版年:** NOV 2019
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使用次数 (最近 180 天): 2
使用次数 (2013 年至今): 10
引用的参考文献数: 50
摘要: To investigate the quality of domestic groundwater and assess its risk to inhabitants of the Guanzhong Basin, China, 191 groundwater samples were collected to analyze major ions, nitrate, pH, total dissolved solids (TDS), total hardness (TH), and electrical conductivity (EC). The physiochemical parameters, hydrochemical facies, and sources of major ions were analyzed using Durov diagrams, bivariate diagrams, and chloro-alkaline indices (CAI-I and CAI-II). The suitability of groundwater for drinking, the nitrate distribution, and human health risk (HHR) for different age groups were evaluated. The results showed that the relative abundance of cations in the groundwater samples was K++Na+ > Ca2+ > Mg2+, while that of anions was HCO3- > SO42- > Cl- > NO3-. Groundwater samples mainly contained HCO3-Na and HCO3-Ca, which were introduced mainly by rock weathering and ion exchange. The groundwater in the Guanzhong Basin contained mainly good and medium water, and the groundwater in the southern part of the Wei River was better than that north of the Wei River. Areas containing high nitrate concentrations were mainly located in the central and western parts of the Guanzhong Basin. The percentages of low risk (<45 mg/L), high risk (45-100 mg/L), and very high risk (>100 mg/L) of nitrate pollution in the study area were 90.58%, 8.9%, and 0.52%, respectively. The HHR assessment results indicated that people in the 6-12 month age group were more likely to suffer from health complications due to a higher nitrate concentration, followed by 6-11 years, 21-65 years, 18-21 years, >= 65 years, 11-16 years, and 16-18 years age groups, which was mainly due to the different exposure parameters. The results of this study will be useful in regional groundwater management and

protection.

入藏号: WOS:000498842000192

PubMed ID: 31683798

语言: English

文献类型: Article

作者关键词: groundwater quality; nitrate contamination; health risk assessment; water quality index; Guanzhong Basin

KeyWords Plus: SHALLOW GROUNDWATER; RIVER-BASIN; CONTAMINATION; AQUIFERS; ORIGIN; PLAIN; WATER; IRRIGATION; POLLUTION

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地质工程与测绘学院

第 1 条，共 3 条

标题: Sea Surface-Visible Aquaculture Spatial-Temporal Distribution Remote Sensing: A Case Study in Liaoning Province, China from 2000 to 2018

作者: Kang, JM (Kang, Junmei); Sui, LC (Sui, Lichun); Yang, XM (Yang, Xiaomei); Liu,

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摘要: Aquaculture plays an important role in providing food and reducing poverty but it affects environmental change and coastal ecosystems. Remote sensing is a technology that is helpful in the spatial-temporal dynamic monitoring of aquaculture, coastal management, and environmental monitoring. Most research focuses on inland and coastal areas, and little attention is paid to the extensive distribution of marine aquaculture. As an example, we use the freely available Landsat data of the developed marine aquaculture Liaoning Province of China and use the object-oriented automatic extraction method to analyze the spatial and temporal distribution information of marine aquaculture from 2000 to 2018. The accuracy evaluation from the randomly distributed sample points in high-resolution remote sensing images shows that the extraction accuracy for all of the five individual years of aquaculture area was higher than 82%. The results showed that (1) in the past 19 years, the area of marine aquaculture in Liaoning Province showed an increasing trend, which increased from 35.41 km(2) in 2000 to 201.83 km(2) in 2018, approximately 5.7 times increase in total area, but the growth rate decreased slightly due to government policy and the environmental quality of the sea area. (2) The centroid of offshore aquaculture in Liaoning Province shows a migration pattern to the northeast, in general, extending from the Dalian Bay sea area to the eastern sea area of the Dalian Chengshantou National Nature Reserve of Coastal Landform in the northeastern direction, and the migration distance reached 48.78 km. Moreover, the migration distance between 2005 and 2010 was the largest of all of the periods, reaching 35.43 km. The new marine aquaculture areas are mainly concentrated in the eastern direction of Xiaoyao Bay, the Changshan Islands, and Guanglu Island in Changhai County. (3) The landscape pattern of marine aquaculture in Liaoning Province is split, large-scale aquaculture and small-scale aquaculture are symbiotic, and landscape ecological activities are active. For local managers, this study can provide valuable supporting data for the assessment of marine aquaculture yield in this region, comprehensive control and management of the marine environment, and stability of the marine ecosystem. For other countries or regions, this work provides a great reference value for monitoring the dynamic spatial distribution of marine aquaculture.

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语言: English

文献类型: Article

作者关键词: remote sensing; marine aquaculture; spatial distribution; dynamic monitoring; Liaoning Province

KeyWords Plus: RAFT CULTIVATION AREA; AN EMPIRICAL-ANALYSIS;

INDIAN-OCEAN; COASTAL; EXTRACTION; MARICULTURE; ECOSYSTEM; IMPACT; EFFICIENCY; MIGRATION

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第 2 条，共 3 条

标题: Field Measurement and Research on Environmental Vibration due to Subway Systems:

A Case Study in Eastern China

作者: Xu, R (Xu, Rui); Li, XC (Li, Xunchang); Yang, W (Yang, Wei); Rabiei, M (Rabiei, Minou); Yan, CL (Yan, Chenglong); Xue, ST (Xue, Songtao)

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引用的参考文献数: 31

摘要: With the rapid development of subway systems, the negative environmental impacts of vibration induced by subways has gradually become a research hotspot. For the purpose of developing predictive models of vibration and designing effective vibration mitigation systems, continuous field dynamic measurements were conducted simultaneously in a subway tunnel, ground, and building in eastern China, the most prosperous region in China. The characteristics of vibration transmission and attenuation induced by subway were analyzed by statistical analysis of large amounts of measurement data. The results showed that most prominent and visible attenuation of vibration is from the track to the ballast bed in the tunnel, where the ground-borne vibration would quickly decrease exponentially with distance. The results also showed that the measured attenuation value of indoor vibration was approximate 0.76 dB on average between each floor. Moreover, the decay ratio of the vibration increased with the increase in the frequency range. Based on these findings, construction gauge of 20-25 m outside of the tunnel is recommended. In addition, reducing the vibration source excitation intensity is the most effective vibration isolation method, especially by track structural transformation.

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语言: English

文献类型: Article

作者关键词: subway; vibration transmission; vibration attenuation; ground-borne vibration; vibration isolation design

KeyWords Plus: TRAIN-INDUCED VIBRATIONS; GROUND VIBRATION; PREDICTION; BUILDINGS; NOISE; MODEL

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标题: Economic Globalization Impacts on the Ecological Environment of Inland Developing Countries: A Case Study of Laos from the Perspective of the Land Use/Cover Change
作者: Wang, J (Wang, Jun); Sui, LC (Sui, Lichun); Yang, XM (Yang, Xiaomei); Wang, ZH (Wang, Zhihua); Ge, DZ (Ge, Dazhuan); Kang, JM (Kang, Junmei); Yang, FS (Yang, Fengshuo); Liu, YM (Liu, Yueming); Liu, B (Liu, Bin)
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摘要: Economic globalization promotes the economic development of underdeveloped regions but also influences the ecological environments of these regions, such as natural forest degradation. For inland developing regions with underdeveloped traffic routes, are the effects on the ecological environment also as obvious? To reveal the response characteristics of the ecological environment of the inland developing countries to globalization, we took Laos as an example, and used the land use/cover change data and also its exports and imports data to analyze the ecological environment change since the millennium. Land use transfer matrix analysis showed that Laos had encountered a large conversion of 14.43% natural forest to plantation forest since 2000 to 2017, and also a degradation of 5.94% natural forest to shrubland and grassland. Landscape pattern analysis showed that these changes were the main reasons of the fragmentation of ecological patches, which would lead to a reduction in biodiversity. More, topographic analysis further showed that natural forest degradation mainly took place in high-altitude and large slope areas, which could increase the potential of

natural hazards such as floods. Coupling analysis with its exports and imports data indicated that economic globalization still had a significant impact on the country's ecological environment although Laos is an inland developing country. Laos should strengthen the regulation of renewable resources such as forests and water resources, to avoid losing the renewable resources market while still enjoying the dividends of economic globalization. At the same time, it is necessary to accurately evaluate the indirect impacts of development on neighboring countries to ensure sustainable development.

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语言: English

文献类型: Article

作者关键词: economic globalization; ecological environment; land use; cover; landscape pattern; topographic analysis

KeyWords Plus: ECOSYSTEM SERVICES; LANDSCAPE PATTERN; FARMLAND TRANSITION; COVER; CLIMATE; DYNAMICS; URBANIZATION; SEGMENTATION; BIODIVERSITY; CATCHMENT

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信息工程学院

第 1 条，共 3 条
标题: Control strategies for dynamic motorway traffic subject to flow uncertainties
作者: Li, Y (Li, Ying); Chow, AHF (Chow, Andy H. F.); Zhong, RX (Zhong, Renxin)
来源出版物: TRANSPORTMETRICA B-TRANSPORT DYNAMICS **卷:** 7 **期:** 1 **页:** 559-575 **文献号:** UNSP 04015015 **DOI:** 10.1080/21680566.2018.1447410 **出版年:** DEC 23 2019
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摘要: This paper analyses the performance of motorway control strategies subject to real-time flow measurement and modeling uncertainties. The control strategies are derived and tested on the cell transmission model with which global optimal solutions can be derived through solving linear programs. In particular, we present an adaptive control strategy which incorporates prevailing variations in traffic flow through a rolling horizon optimization framework. This adaptive strategy is compared with a min-max robust control formulation on a Monte Carlo stochastic simulation test bed. The robust control delivers the best performance in terms of minimizing delay variability due to its underlying conservativeness, while it comes at the expense of overall delay reduction. In contrast, the adaptive controller outperforms the robust controller in terms of delay reduction. Nevertheless, the benefit gained from the adaptive control diminishes as the motorway system gets saturated with traffic. It is also found that the adaptive controller is not effective in improving travel time reliability, at least under recurrent conditions. The findings reveal the limitation of adaptive control and provide insight to control design and infrastructure planning concerning installation of an advanced traffic control system.
入藏号: WOS:000463663800001
语言: English
文献类型: Article
作者关键词: Adaptive ramp metering; cell transmission model; optimal control; robust optimization; rolling horizon

KeyWords Plus: TRANSMISSION MODEL; SYSTEM; ASSIGNMENT; PREDICTION; WAVES; STATE

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第 2 条，共 3 条

标题: Vision-based vehicle detection and counting system using deep learning in highway scenes

作者: Song, HS (Song, Huansheng); Liang, HX (Liang, Haoxiang); Li, HY (Li, Huaiyu); Dai, Z (Dai, Zhe); Yun, X (Yun, Xu)

来源出版物: EUROPEAN TRANSPORT RESEARCH REVIEW **卷:** 11 **期:** 1 **文献号:** 51 **DOI:** 10.1186/s12544-019-0390-4 **出版年:** DEC 30 2019
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摘要: Intelligent vehicle detection and counting are becoming increasingly important in the field of highway management. However, due to the different sizes of vehicles, their detection

remains a challenge that directly affects the accuracy of vehicle counts. To address this issue, this paper proposes a vision-based vehicle detection and counting system. A new high definition highway vehicle dataset with a total of 57,290 annotated instances in 11,129 images is published in this study. Compared with the existing public datasets, the proposed dataset contains annotated tiny objects in the image, which provides the complete data foundation for vehicle detection based on deep learning. In the proposed vehicle detection and counting system, the highway road surface in the image is first extracted and divided into a remote area and a proximal area by a newly proposed segmentation method; the method is crucial for improving vehicle detection. Then, the above two areas are placed into the YOLOv3 network to detect the type and location of the vehicle. Finally, the vehicle trajectories are obtained by the ORB algorithm, which can be used to judge the driving direction of the vehicle and obtain the number of different vehicles. Several highway surveillance videos based on different scenes are used to verify the proposed methods. The experimental results verify that using the proposed segmentation method can provide higher detection accuracy, especially for the detection of small vehicle objects. Moreover, the novel strategy described in this article performs notably well in judging driving direction and counting vehicles. This paper has general practical significance for the management and control of highway scenes.

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语言: English

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作者关键词: Vehicle dataset; Image segmentation; Vehicle detection; Vehicle counting; Highway management

KeyWords Plus: TRACKING

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第 3 条，共 3 条

标题: DSRC-based rear-end collision warning system - An error-component safety distance

model and field test

作者: Zhao, XM (Zhao, Xiangmo); Jing, SC (Jing, Shoucai); Hui, F (Hui, Fei); Liu, RH (Liu, Ronghui); Khattak, AJ (Khattak, Asad J.)

来源出版物: TRANSPORTATION RESEARCH PART C-EMERGING TECHNOLOGIES **卷:** 107 **页:** 92-104 **DOI:** 10.1016/j.trc.2019.08.002 **出版年:** OCT 2019

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摘要: Dedicated short-range communication (DSRC) technology can provide drivers with information about other vehicles that are beyond the normal range of vision and enables the development of driving support systems such as the rear-end collision warning system (ReCWS). However, technology constraints such as communication delays and GPS error affect the accuracy of a DSRC-based ReCWS. This paper proposes a ReCWS design that explicitly represents functional specifications of DSRC technology, including transmission delay specifications that describe the information transmission process and an error-component safety distance specification used to represent the effect of GPS error and the information propagation delay. We propose three collision warning strategies each with different deceleration requirements. The system is assembled with off-the-shelf DSRC and mobile technology that can be readily installed into test vehicles. To test the effectiveness of the proposed ReCWS, we ran a variety of controlled scenarios on a test track. The results show a high degree of warning accuracy. These field test results also provide calibrated system parameter values for future studies and designs of DSRC-based ReCWSs.

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语言: English
文献类型: Article
作者关键词: Dedicated short-range communication (DSRC); Rear-end collision warning; Transmission delay; Safety distance model; Warning strategy; V2V
KeyWords Plus: TIME; BEHAVIOR

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理学院

第 1 条，共 2 条

标题: Analysis of positional uncertainty of road networks in volunteered geographic information with a statistically defined buffer-zone method

作者: Zhang, WB (Zhang, Wen-Bin); Leung, Y (Leung, Yee); Ma, JH (Ma, Jiang-Hong)
来源出版物: INTERNATIONAL JOURNAL OF GEOGRAPHICAL INFORMATION SCIENCE **卷:** 33 **期:** 9 **页:** 1807-1828 **DOI:** 10.1080/13658816.2019.1606430 **提前访问日期:** APR 2019 **出版年:** SEP 2 2019
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摘要: Volunteered geographic information (VGI) is crowdsourced information that can enrich and enhance research and applications based on geo-referenced data. However, the quality of VGI is of great concern, and positional accuracy is a fundamental basis for the VGI quality assurance. A buffer-zone method can be used for its assessment, but the buffer radius in this technique is subjectively specified; as result, different selections of the buffer radius lead to different positional accuracies. To solve this problem, a statistically defined buffer zone for the positional accuracy assessment in VGI is proposed in this study. To facilitate practical applications, we have also developed an iterative method to obtain a theoretically defined buffer zone. In addition to the positional accuracy assessment, we have derived a measure of positional quality, which comprises the assessment of positional accuracy and the level of confidence in such assessment determined with respect to a statistically defined buffer zone. To illustrate and substantiate the theoretical arguments, both numerical simulations and real-life experiments are performed using OpenStreetMap. The experimental results confirm the high significance of the proposed statistical approach to the buffer zone-based assessment of the positional uncertainty in VGI.

入藏号: WOS:000471496700001
语言: English
文献类型: Article
作者关键词: Buffer-zone method; openstreetmap; positional uncertainty; statistically defined buffer zone; volunteered geographic information
KeyWords Plus: QUALITY
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第 2 条，共 2 条
标题: Geo-parcel-based geographical thematic mapping using C5.0 decision tree: a case study of evaluating sugarcane planting suitability
作者: Wu, TJ (Wu, Tianjun); Dong, W (Dong, Wen); Luo, JC (Luo, Jiancheng); Sun, YW (Sun, Yingwei); Huang, QT (Huang, Qiting); Wu, WZ (Wu, Weizhi); Hu, XD (Hu, Xiaodong)
来源出版物: EARTH SCIENCE INFORMATICS 卷: 12 期: 1 页: 57-70 DOI: 10.1007/s12145-018-0360-8 出版年: MAR 2019
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摘要: Geographical thematic mapping based on spatial information can effectively support scientific decision-making in Geosciences. To obtain finer spatial decision information, this paper proposes a geo-parcel-based thematic mapping methodology for evaluating cash crop planting suitability using C5.0 decision tree (DT). In this study, geo-parcels are utilized as basic mapping units. Multi-source data are firstly employed to increase geo-parcel units' attributes and a decision table then is constructed under a multi-attribute index system. Next, rules are mined using a C5.0 DT algorithm according to local geo-parcels in this decision table. Finally, rules are referred as thematic-distinguishing knowledge for inferential mapping in global geo-parcels. A case study of sugarcane planting suitability evaluation is conduct based on the proposed methodology. The experimental results showed that the cross-validation accuracy of the rules is 81.34% and the sum of the very suitable area and suitable area in the generated evaluation map is close to that of historical selected high-yield and high-sugar-content sugarcane bases, which indicated that the mapping result is in good agreement with the actual selection situation. These also demonstrate the effectiveness of our method and thus may be extended to other domains requiring fine geographical thematic mapping of cash crop planting suitability.
入藏号: WOS:000459386300005
语言: English
文献类型: Article
作者关键词: Geographical thematic mapping; Geo-parcel; Multi-attribute index system; C5; 0 decision tree algorithm; Cash crop planting suitability evaluation; Sugarcane
KeyWords Plus: LAND-COVER; MULTICRITERIA EVALUATION; KNOWLEDGE DISCOVERY; INFORMATION-SYSTEMS; FUZZY-AHP; CLASSIFICATION
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其他学院

第 1 条，共 5 条

标题: Expansion of Rural Settlements on High-Quality Arable Land in Tongzhou District in Beijing, China

作者: Li, HH (Li, Huanhuan); Song, W (Song, Wei)

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摘要: Settlement expansion caused by urbanization is an important factor leading to the loss of arable land across the world. Due to various factors in China, such as institutional problems, the total number of rural settlements is decreasing, while the total area continues to increase. Rural settlements expand mainly into arable land, resulting in a significant loss of high-quality farmland, thus threatening long-term food security. However, research on this

subject is relatively scarce. In this study, using KeyHole and RESURS F1 satellite remote sensing images, we examined the spatial expansion of rural settlements in Tongzhou District, Beijing, in 1972 and 1991. Then, the consumption of high-quality arable land by rural settlements expansion was assessed. It was found that the overall accuracy of the produced maps for 1972 and 1991 were 93% and 90%, respectively. The accuracy of mapped changes from 1972 to 1991 was as high as 90%. From 1972 to 1991 and from 1991 to 2015, the rural settlements in Tongzhou District expanded by 51.54% and 79.91% respectively, with 53.72% and 60.64% of the expanded rural settlements being on arable land. Rural settlements expanded mainly into high-quality arable land at the beginning of the study period, whereas later on, medium- and low-quality farmland was also occupied, albeit to a lesser degree.

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语言: English

文献类型: Article

作者关键词: land use change; rural settlement expansion; arable land occupation; consumption of high-quality arable land; China

KeyWords Plus: CULTIVATED LAND; ACCURACY ASSESSMENT; DRIVING FORCES; SPATIOTEMPORAL EVOLUTION; RAPID URBANIZATION; URBAN EXPANSION; COVER CHANGE; RIVER DELTA; TIME-SERIES; PATTERNS

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第 2 条，共 5 条

标题: Vulnerability Analysis of Urban Rail Transit Network within Multi-Modal Public

Transport Networks

作者: Lu, QC (Lu, Qing-Chang); Lin, S (Lin, Shan)

来源出版物: SUSTAINABILITY **卷:** 11 **期:** 7 **文献号:** 2109 **DOI:** 10.3390/su11072109 **出版年:** APR 1 2019

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摘要: In terms of urban rail transit network vulnerability, most studies have focused on the network topology characteristics and travel cost changes after network incidents and analyzed rail transit network independently. The neglects of passenger flow distributions on the network and alternative public transport modes under rail network disruptions would either underestimate or overestimate the vulnerability of rail transit network, and thus lead to inaccurate results and decisions. This study presents an accessibility-based measurement for urban rail transit network vulnerability analysis and explicitly accounts for rail passenger flow characteristics, travel cost changes, and alternative transit modes. It is shown that the proposed approach is capable of measuring the consequences on rail network, and the advantages of the accessibility method are demonstrated and compared. The methodology is applied to the urban rail transit network of Shenzhen, China within a multi-modal public transport network. Results reveal that the consequences of disruptions on network accessibility are obviously different for stations with different passenger flow characteristics, and some undisrupted stations are found to be vulnerable under surrounding station failures. The proposed methodology offers reliable measurements on rail transit network vulnerability and implications for decision-making under rail network disruptions.

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文献类型: Article

作者关键词: urban rail transit vulnerability; multi-modal transit network; accessibility; network interdependency; disruptions

KeyWords Plus: RESILIENCE

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摘要: Product color plays a vital role in shaping brand style and affecting users' purchase decision. However, users' preferences about product color design schemes may vary due to their cognition differences. Although considering users' perception of product color has been widely performed by industrial designers, it is not effective to support this activity. In order to provide users with plentiful product color solutions as well as embody users' preference into product design process, involving users in interactive genetic algorithms (IGAs) is an effectual way to find optimum solutions. Nevertheless, cognition difference and uncertainty among users may lead to various understanding in line with IGA progressing. To address this issue, this study presents an advanced IGA by combining users' cognition noise which includes cognition phase, intermediate phase, and fatigue phase. Trapezoidal fuzzy numbers are employed to represent uncertainty of users' evaluations. An algorithm is designed to find key parameters through similarity calculation between RGB value and their area proportion of two individuals and users' judgment. The interactive product color design process is put forward with an instance by comparing with an ordinary IGA. Results show that (1) knowledge background will significantly affect users' cognition about product colors and (2) the proposed method is helpful to improve convergence speed and evolution efficiency with convergence increasing from 67.5% to 82.5% and overall average evolutionary generations decreasing from 18.15 to 15.825. It is promising that the proposed method can help reduce users' cognition noise, promote convergence, and improve evolution efficiency of interactive product color design.
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第 4 条，共 5 条

标题: Analysis on the Choice of Livelihood Strategy for Peasant Households Renting out Farmland: Evidence from Western Poverty-Stricken Areas in China
作者: Cai, J (Cai, Jie); Wang, T (Wang, Ting); Xia, XL (Xia, Xianli); Chen, YZ (Chen, Yazhi); Lv, HQ (Lv, Hongqiang); Li, N (Li, Ni)
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摘要: Investigating the choice of livelihood strategies has great significance for improving the living standards of peasant households who rent out farmland. This study evaluates the impact of renting-out land on households' livelihood strategies in China's western poverty-stricken areas. Data were obtained from cross sectional survey of 585 field survey data from peasant households who rent out land. The K-means clustering method was used to classify the livelihood strategies of the sample households. In view of sustainable livelihood framework, this paper used combination weighting model based on game theory to calculate the quo of households' livelihood capital. The Multinomial Logistic Regression was used to

explore the relationship between livelihood capitals and livelihood strategies. Results show that: livelihood strategy of households who rent out the land can be divided into "agricultural-led" livelihood strategy, "working-oriented" livelihood strategy and "part-time" livelihood strategy. Additionally, the results of Multinomial Logistic Regression show that the households with high human capital and financial capital tend to choose the "working-oriented" livelihood strategy and the households with high natural capital tend to choose the "agricultural-led" livelihood strategy. Therefore, in order to realize the sustainable livelihood of these households, different policy support should be proposed based on the heterogeneity of households in the process of land transfer.

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作者关键词: households who rent out land; livelihood strategy; livelihood capital; Western poverty-stricken areas in China

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第 5 条，共 5 条

标题: Enhancing student teacher motivation through mentor feedback on practicum reports: a case study

作者: Lin, Z (Lin, Zhong); Wu, B (Wu, Bin); Wang, F (Wang, Feng); Yang, DL (Yang, Dangling)

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摘要: Drawing on data from semi-structured interviews, this case study enquires into the methods employed by a Chinese teacher mentor of English as a Foreign Language to give feedback on practicum reports to poorly motivated student teachers. Data analysis showed that the mentor provided written comments mainly on empowered motivation with a focus on the reflection section. The findings also revealed that the mentor patterned her feedback with 'praise-suggestion' to shape student teachers' identity emotionally and ethically.

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