

科技通報

全国中文核心期刊

中国科技核心期刊

ISSN 1001-7119

# 科技通報



BULLETIN OF SCIENCE AND TECHNOLOGY

2017年10月第33卷 第10期

Vol.33 No.10 Oct. 2017

浙江省科学技术协会主办

Sponsored by Zhejiang Association for Science and Technology

第三十三卷  
第十期

二〇一七年十月



中国·杭州  
HANGZHOU CHINA

## 目 次

### · 综述 ·

- 陆地生态系统凋落物分解及影响因子的研究进展 ..... 王雅婷, 卢剑波(1)

### · 数理科学和化学 ·

- 一类格子区组 GDD 的存在性及应用 ..... 王成敏, 单金忻(11)

- 一种微小水生昆虫水面浮力测量装置的设计 ..... 吴宏福, 孔祥清, 曲艳东(15)

- 基于差分演化算法高斯随机聚类数学建模分析 ..... 陈彬韬, 史慧娟(20)

### · 地球科学 ·

- 页岩气储层岩石孔隙特征对岩石密度作用机理探究 ..... 赵子斌, 侯读杰, 陈皓禹, 程熊, 董立成, 贾智彬(23)

- 砂质辫状河储层构型及天然气分布规律研究 ..... 单敬福, 陈欣欣, 汤军(29)

- 透镜体砂岩油藏合理注采井网优化研究 ..... 胡兵, 欧阳传湘, 赵春燕(34)

- 一次初春强冰雹天气过程分析 ..... 赵璐, 赵放, 楼小芬(40)

- 佛山两次龙卷过程的物理量和雷达资料对比分析 ..... 张晓冬, 庞古乾, 林镇国(46)

- 嘉兴市应急地下水水源选择及环境效应分析 ..... 余国春,周宗尧,杨丽红,黄卫平,王小华(53)  
基于遥感生态指数的永定客家土楼遗产地生态评价 ..... 高 鹏,徐志刚,陈绍杰,蔡国辉(58)  
薄层SAGD 循环预热管柱结构优化研究 ..... 张 磊,伍文英,胡元伟,陈 森,黄 勇(64)

### · 医药、卫生 ·

- 数据挖掘算法对乳腺肿瘤超声图像特征的优化及良恶性分类研究 ..... 孙 梅,严传波,张 雨,毕雪华(67)  
长期高强度有氧训练对雄性大鼠跟腱粘弹性的影响 ..... 李向勇(73)

### · 工业技术 ·

- 基于改进的结构信息和运动估计的视频质量评价 ..... 林宪峰,赖惠成,班俊硕(78)  
基于 BCH 码的 DCT 域数字图像水印算法 ..... 吴庆涛,曹再辉,施进发(82)  
基于 HSV-HOG 的改进 TLD 目标跟踪方法 ..... 孙春梅,谢 明,王 婷(87)  
风电场等值模型误差产生原因及改进方法分析 ..... 杨培宏,胡庆林,付 盼,李亚龙,韩小峰(92)  
基于图像纹理特征的变容量可逆水印算法 ..... 李晓静,郭飞燕,马海英(98)  
云计算环境下一步性口令身份认证系统设计 ..... 姜明富,孙 剑(104)  
直击雷影响下综合接地技术对铁路通信数据传输稳定性的作用分析 ..... 何一文,李 珍(109)  
基于虚拟现实的柱面全景图像拼接方法研究 ..... 王丹丹,陈 康(113)  
冲击试验机的系统设计 ..... 王 洋,蒋书波,王 森(117)  
基于模糊 PID 算法的铝棒温度控制系统研究 ..... 蒋思中(121)  
基于序列关联度的汽轮机高压缸运行参数优化数值模拟 ..... 陈爱萍(125)  
灰色关联度分析法在变压器三比值缺码数据故障诊断中的应用 ..... 徐闻婕,阮江军,宋 斌(129)  
基于预测模型和缓存替换策略的网络资源访问研究 ..... 程龙泉(134)  
基于物联网技术的高校消防安全管理系统设计研究 ..... 阳琼芳,罗云芳(138)  
云计算下的一种网络流量预测算法的研究 ..... 赵 荷,赵海燕,宁多彪(143)  
基于扩展卡尔曼滤波的子结构损伤识别方法 ..... 张效忠,孙延华(148)  
基于分簇结构减少能耗的目标跟踪算法研究——ECSL 算法 ..... 王 秉(155)  
基于数值模拟和监测的边坡稳定性研究 ..... 张竟超,宋小软(158)  
基于风力的新型对称式八行程提水机结构 ..... 陈志雄,胡文杰,刘珍珍,陈 进(161)  
垃圾固化土强度特性的试验研究 ..... 王志萍,沙 玲(165)  
核壳结构黄河泥沙钢筋混凝土免蒸免烧备防石的研制与开发  
..... 张金升,陈 伟,代振明,袁延强,齐金城,戚 涛,张 勇(170)  
宁夏沙坡头水利工作中振动荷载作用下软土地基变形特性研究 ..... 寇 煜(175)  
一种新型软土地基处理方法 ..... 翁 眇,严 平(179)  
古建筑结构加固防渗改造材料筛选研究 ..... 郭燕沫,李 画(183)  
基于 ZigBee 的智能家居能耗管理系统研究 ..... 刘 伟,张兴华,徐 胜(188)  
基于适应性模型的天井民居夏季热舒适度评价 ..... 段忠诚,张 延,姚 刚(192)

- 郑州海绵城市雨水控制利用的研究 ..... 李荫(197)  
基于树形结构模拟的建筑布局设计优化 ..... 彭磊(201)

· 交通运输 ·

- 城市道路景观分布对驾驶员视觉刺激性的影响 ..... 高连平(205)  
飞机尾涡参数的数值模拟与定量计算方法研究 ..... 魏志强,刁华智,李志远,刘薇,温瑞英(209)  
高速公路瓶颈路段限速梯级过渡段长度设计 ..... 温志刚(214)

· 环境科学 ·

- 基于物联网技术的高校智慧消防管理系统建设探讨 ..... 吴学政(218)  
义龙试验区电磁辐射分布的测量与研究 ..... 李川,唐广林(222)  
建设项目安全状态评判及量化研究 ..... 沈苾文,张英(227)

· 教育、科学 ·

- 自然科学基金项目获奖的影响因素与对策研究——基于1989—2010年浙江省自然科学基金项目的分析  
..... 方美君,吴琳(232)  
基于Denison模型的消防部队基层文化测量体系研究 ..... 张璐(238)  
钢琴音质的主观评价体系与声学研究 ..... 刘琉,赵博楠(242)  
互联网+形势下高职教育翻转课堂教学模式研究——以《网络营销实务》课程为例 ..... 冯曦涓(248)  
浅析高校志愿服务对接青年公益创业生态链 ..... 陆丽青,孙梦瑶(252)  
我国民族文化旅游资源开发潜力的多层次灰色评价研究——以海南疍家文化旅游资源开发潜力评价为例  
..... 管玉梅,王浩,夏冬艳,王树恩(256)  
效益成本分析的文化公共服务体系优化选配模型 ..... 王兴华(261)  
多元线性模型视角下城镇化发展水平影响因素效度的实证研究 ..... 吴建荣(265)  
特色小镇在杭州信息经济中的独特作用研究 ..... 罗如意,丁海兵,倪芝青,钱种明,刘斌,张倩(270)

期刊基本参数:CN33-1079/N\*1985\*12\*16\*274\*zh\*P\* ¥ 10.00\*1250\*57\*2017-10

# BULLETIN OF SCIENCE AND TECHNOLOGY

Vol. 33 No. 10 Oct. 2017

---

---

## CONTENTS

<b>A Review on Litter Decomposition and Its Impact Factor in Terrestrial Ecosystems</b>	<i>Wang Yating Lu Jianbo(1)</i>
<b>The Existence and Application of a Class of Grid Block GDDs</b>	<i>Wang Chengmin Shan Jinxin(11)</i>
<b>Design of the Measuring System for Water-supporting Force of Small Aquatic Insects</b>	<i>Wu Hongfu Kong Xiangqing Qu Yandong(15)</i>
<b>Analysis of Gaussian Cluster Mathematical Modeling Based on Difference Evolution Algorithm</b>	<i>Chen Bintao Shi Huijuan(20)</i>
<b>Research on Influence of Porosity of Shale Gas Reservoir on Rock Density</b>	
	<i>Zhao Zibin Hou Dujie Chen Haoyu Chen Xiong Dong Licheng Jia Zhibin(23)</i>
<b>Reservoir Architecture and Gas Distribution in Sandy Braided Sedimentation</b>	<i>Shan Jingfu Chen Xinxin Tang Jun(29)</i>
<b>The Optimization Research of Lenticular Sandstone Reservoir Reasonable Injection-production Well Pattern</b>	<i>Hu Bing Ouyang Chuanxiang Zhao Chunyan(34)</i>
<b>Analysis of the Severe Hail Event in Early Spring</b>	<i>Zhao Lu Zhao Fang Lou Xiaofen(40)</i>
<b>Contrastive Analysis of Indices and Doppler Radar Data for Two Tornado Cases in Foshan</b>	<i>Zhang Xiaodong Pang Guqian Lin Zhenguo(46)</i>
<b>Anticipation of Environmental Effects and Delimitation of Emergency Groundwater Sources in Jiaxing</b>	
	<i>Yu Guochun Zhou Zongyao Yang Lihong Huang Weiping Wang Xiaohua(53)</i>
<b>Ecological Evaluation About Yongding Hakka Tulou Heritage Based on Remote Sensing Ecological Index(RSEI)</b>	<i>Gao Peng Xu Zhigang Chen Shaojie Cai Guohui(58)</i>
<b>Study on SAGD Circulating Preheating String Structure Optimization in Thin Super Heavy Oil Reservoir</b>	<i>Zhang Lei Wu Wenying Hu Yuanwei Chen Sen Huang Yong(64)</i>
<b>Optimization and Classification of Ultrasound Image Features for Breast Tumor Based on Data Mining Algorithm</b>	
	<i>Sun Mei Yan Chuanbo Zhang Yu Bi Xuehua(67)</i>
<b>Effect of Long-term High Intensity Aerobic Training on Male Rat Achilles Tendon Viscoelastic</b>	<i>Li Xiangyong(73)</i>
<b>Video Quality Assessment Based on the Structure Similarity of Interest Region</b>	
	<i>Lin Xianfeng Lai Huicheng Ban Junshuo(78)</i>
<b>DCT Digital Image Watermarking Algorithm Based on BCH Code</b>	<i>Wu Qingtao Cao Zaihui Shi Jinfa(82)</i>
<b>Improve the TLD Target Tracking Method Based on HSV-HOG</b>	<i>Sun Chunmei Xie Ming Wang Ting(87)</i>
<b>Analysis on the Cause of the Error Existing in Equivalent Model of Wind Farm and the Improvement Method</b>	
	<i>Yang Peihong Hu Qinglin Fu Pan Li Yalong Han Xiaofeng(92)</i>
<b>Variable Capacity Reversible Watermarking Algorithm Based on Image Texture Feature</b>	
	<i>Li Xiaojing Guo Feiyan Ma Haiying(98)</i>

<b>Design of One-time Password Authentication System in Cloud Computing Environment</b>	<i>Jiang Mingfu Sun Jian( 104)</i>
<b>Analysis of the Effect of Integrated Grounding Technology on the Stability of Railway Communication Data Transmission Under Direct Lightning Strike</b>	<i>He Yiwen Li Zhen( 109)</i>
<b>Research on Mosaic Method of Cylindrical Panoramic Image Based on Virtual Reality</b>	<i>Wang Dandan Chen Kang( 113)</i>
<b>System Design of Impact Testing Machine</b>	<i>Wang Yang Jiang Shubo Wang Sen( 117)</i>
<b>Research of Aluminum Bar Temperature Control System Based on Fuzzy PID Algorithm</b>	<i>Jiang Sizhong( 121)</i>
<b>Numerical Simulation of Operation Parameters Optimization of Steam Turbine High Pressure Cylinder Based on Sequence Correlation Degree</b>	<i>Chen Aiping( 125)</i>
<b>Application of Grey Correlation Analysis Method in Transformer Fault Diagnosis with Missing Code in Three-ratio Method</b>	<i>Xu Wenjie Ruan Jiangjun Song Bin( 129)</i>
<b>Research on Network Resource Access Based on Prediction Model and Cache Replacement Policy</b>	<i>Cheng Longquan( 134)</i>
<b>Research on the Design of University Fire Safety Management System Based on Internet of Things Technology</b>	<i>Yang Qiongfang Luo Yunfang( 138)</i>
<b>Research into the Network Traffic Prediction Algorithm in Cloud Computing</b>	<i>Zhao He Zhao Haiyan Ning Duobiao( 143)</i>
<b>Substructure Damage Identification Method Based on Extended Kalman Filter</b>	<i>Zhang Xiaozhong Sun Yanhua( 148)</i>
<b>Research on Target Tracking Algorithm Based on Clustering Structure to Reduce Energy Consumption ECSL Algorithm</b>	<i>Wang Bing( 155)</i>
<b>Research on Stability of Slope Based on Numerical Simulation and Monitoring</b>	<i>Zhang Jingchao Song Xiaoruan( 158)</i>
<b>A New Water Pump Structure of Symmetrical Eight Trips Based on Wind Power</b>	<i>Chen Zhixiong Hu Wenjie Liu Zhenzhen Chen Jin( 161)</i>
<b>Experimental Study on the Strength Properties of MSW Stabilized Soil</b>	<i>Wang Zhiping Sha Ling( 165)</i>
<b>Study and Development of Integrate Core-Shell Structure River-Emergency-Repairing-Stone Based on Yellow River Silt Core and Steel Enforced Concrete Box</b>	<i>Zhang Jinsheng Chen Wei Dai Zhenming Yuan Yanqiang Qi Jincheng Qi Tao Zhang Yong( 170)</i>
<b>Study on Deformation Characteristics of Soft Soil Foundation Under Vibration Load in Shapotou Water Conservancy Project in Ningxia</b>	<i>Kou Yu( 175)</i>
<b>A New Technique for Soft-soil Foundation Treatment</b>	<i>Weng Xin Yan Ping( 179)</i>
<b>Screening of Material for Strengthening and Anti-seepage of Ancient Buildings</b>	<i>Guo Yanmo Li Hua( 183)</i>
<b>Research of Smart Home Energy Management System Based on ZigBee</b>	<i>Liu Wei Zhang Xinghua Xu Sheng( 188)</i>
<b>Evaluation Model of Summer Thermal Comfort of Patio Residential Based on Enthalpy Diagram</b>	<i>Duan Zhongcheng Zhang Yan Yao Gang( 192)</i>
<b>Study on Rainwater Resource Utilization in Zhengzhou Spouge City</b>	<i>Li Yin( 197)</i>
<b>Optimization of Layout Design Based on Tree Structure Simulation</b>	<i>Peng Lei( 201)</i>
<b>Influence of Urban Road Landscape Distribution on Driver'S Visual Stimulation</b>	<i>Gao Lianping( 205)</i>
<b>Research on Numerical Simulation and Research of Quantitative Calculating Method of Wake Vortex Parameters</b>	<i>Wei Zhiqiang Diao Huazhi Li Zhiyuan Liu Wei Wen Ruiying( 209)</i>
<b>Length Design of Speed Gradient Cascade Transition Section on Highway Bottleneck</b>	<i>Wen Zhigang( 214)</i>
<b>Disscussion on University Smart Fire Management System Construction Based on Internet of Things Technology</b>	<i>Wu Xuezhen( 218)</i>
<b>Measurement and Study of Electromagnetic Radiation Distribution in Yilong Experimental Area</b>	<i>Li Chuan Tang Guanglin( 222)</i>
<b>Secure State Judge and Quantification of Construction Project</b>	<i>Shen Biwen Zhang Ying( 227)</i>

**Influence Factors and Resolutions for Winning of Natural Science Foundation Awards——Analysis of Zhejiang Natural Science Foundation projects from 1989 to 2010**  
*Fang Meijun ,Wu Lin(232)*

**Research on Fire Army Grass-roots Culture Measurement System Based on Denison Model**  
*Zhang Lu(238)*

**Subjective Evaluation and Acoustical Study of Piano's Sound Quality**  
*Liu Liu Zhao Bonan(242)*

**Study on Flipped Classroom Mode for Higher Vocational Education Under Internet Plus Situation——Take Network Marketing Practice as an Example**  
*Feng Xijuan(248)*

**Analysis of the Combination Between College (Students) Voluntary Service and Ecological Chain of Youth Entrepreneurship for Public Welfare**  
*Lu Liqing Sun Mengyao(252)*

**Research on Multi-level Grey Evaluation of Exploitation Potential of National Cultural Tourism Resources in China Take Hainan Danksas Cultural Tourism Resources as an Example**  
*Guan Yumei ,Wang Hao ,Xia Dongyan ,Wang Shuen(256)*

**Cultural Public Service System Optimization Matching Model Based on Benefit Cost Analysis**  
*Wang Xinghua(261)*

**Emirical Study on the Influencing Factors of the Level of the Development Urbanization Based on MLR Model**  
*Wu Jianrong(265)*

**Research on the Unique Function of the Characteristic Town in Hangzhou Information Economy**  
*Luo Ruyi Ding Haibin Ni Zhiqing , Qian Zhongming Liu Bin Zhang Qian(270)*

