

SOUTH



## 南方智创 国产先锋

南方测绘一直以测绘仪器国产化为己任，继全站仪、测量型GPS之后，攻克三维激光技术壁垒，国产新作——小型化三维激光扫描仪SPL-1500、机载三维激光扫描仪SAL-1500面世。



### 南方SAL-1500 机载三维激光扫描测量系统

- 中远距离 精准高效
- 模块设计 快速部署
- 多目标探测 秋毫可辨
- 精准定位 把控分毫
- 真实色彩 瞬间还原
- 专业软件 专业表现

#### 应用领域

测绘地理信息、交通路网管理、林业调查规划、灾害应急、电力行业等

飞行平台

### 智航 SF1650

六组智能锂电池协同工作，一键关机、智能电量返航、80 m毫米波雷达避障，200 m实时仿地飞行，续航时间70 min@1 kg载荷/50 min@5 kg载荷，拥有超高作业效率。

### 南方SPL-1500 三维激光扫描测量系统

- 中远距离 精准高效
- 小巧轻便 一手掌握
- 真实色彩 瞬间还原
- 多传感器 高度集成
- 高清屏幕 一触即连
- 专业软件 专业表现

#### 应用领域

古建筑测绘、建筑立面、隧道扫描、野外地形图制图等



# 测绘与空间地理信息

主管：黑龙江测绘地理信息局

主办：黑龙江省测绘地理信息学会

出版：《测绘与空间地理信息》编辑部

发行：全国各地邮局（所）及本刊编辑部

全国优秀测绘期刊

《中国核心期刊（遴选）数据库》收录期刊

中国学术期刊综合评价数据库统计源期刊

《CAJ-CD规范》执行优秀期刊

中国期刊全文数据库全文收录期刊

2023 8

（月刊）

Vol.46 No.8

## 支撑自然资源管理 服务生态文明建设

# 目次

2023年第8期(总第46卷第292期)

## 博士园地

基于多源遥感图像和复杂网络的城市主城区识别方法

…………… 谢志伟,单佳强,孙立双,等(1)

软土层深基坑变形监测与数值模拟研究

…………… 贾海鹏,侯刘锁(6)

一种面向多层次制图对象的产生式制图规则模型

…………… 徐立,孙群,陈换新,等(9)

基于工程教育认证的“测绘专业英语阅读”课程教学改革探究与实践

…………… 张盈,牛雪峰(13)

基于SPEI的黑龙江省小兴安岭地区干旱影响因子分析

…………… 梅晓丹,毛学刚,王强,等(16)

## 基金项目专栏

基于P-SA-PSO算法的概率积分法参数反演

…………… 刘阔,张兆江,张丽媛,等(21)

利用POI数据进行地震时空特征可视化分析

…………… 高鹏程,王世杰,吕静,等(26)

基于FLUS-UGB模型的城镇开发边界预测研究

——以滨州市为例

…………… 丛婷婷,戴昭鑫,武鹏达,等(30)

基于高精度轨迹数据的要素特征点提取研究

…………… 梁丽芳,田时雨,王燕云,等(36)

基于升降轨数据的城市地表沉降监测与分析

…………… 张梦茹,冯志立,彭壮壮(40)

基于深度残差网络与梯度优化的室内点云语义分割

…………… 杨颖,戴晨光,张英健(44)

大数据视角的国土资源数据管理思考

…………… 王效益,张瑞欣,周玉科(48)

加权移动平均与曲线拟合模型在沉降监测中的应用

…………… 孟凡效,张宇冉,权冉冉,等(51)

露天矿山地质环境监测分析

——以重庆市中梁山片区为例

…………… 吴凤敏,袁超,余静,等(55)

信阳市农村居民点空间分布特征与影响因素分析

…………… 金赛,计会凤,孙美茹,等(59)

基于OpenLayers的稀土矿区环境分析系统

…………… 聂圣东,刘娴(63)

一种基于图像灰度变化的水平位移监测方法

…………… 贺异欣,汪岚峰(67)

基于资源三号卫星的境外数字高程模型生产

…………… 安剑英,杨忠祥,乔忠诚,等(71)

基于GeoServer的Web瓦斯地质图发布技术

…………… 岳俊(74)

自然资源电子政务平台建设研究

——以乌鲁木齐为例

…………… 穆荣(78)

综合影像白平衡的稀疏光流跟踪河流测速方法

…………… 刘雅楠,李好胜,邓刚,等(81)

基于Sentinel-2A遥感影像的棉花种植信息提取研究

…………… 祁佳峰,郭鹏,徐权,等(85)

高速磁浮轨道安装测控高程控制网测设实验及其精度分析

…………… 袁鑫,杨雪峰,滕焕乐,等(89)

基于激光雷达的智慧交通信息采集算法

…………… 刘亚洲,邓安健(93)

2012—2019年南海南部海洋油气资源开发活动时  
空变化

…………… 马睿,宋子萱,芮琦瑶,等(98)

## 3S技术与应用

关于商用GPS平差软件相关问题的分析

…………… 张祖干(103)

地质勘查安全管理信息系统研究与实现

…………… 刘同文,于广婷,何祖臣,等(106)

福建省卫星遥感影像云服务平台设计与建设 ..... 胡海燕(108)	地理国情监测与国土三调成果数据融合研究 ..... 李雪琪(172)
大面积平坦区高分七号卫星影像无控成图研究 ..... 郝利娟,郭如宝(112)	高分七号卫星在基础性地理国情监测中的应用 ..... 余轩博(176)
GNSS控制网独立基线选取方法及精度分析 ..... 胡玉祥,张洪德,孟庆年,等(116)	<b>测绘工程</b>
广西国家级自然保护地人类活动遥感监测及应用 ..... 吕华权,郭小玉,欧阳艳梅,等(120)	二三维一体化技术在基础测绘生产中的应用研究 ..... 胡红艳,张新利,麻 维(180)
无人机影像与高分卫星影像融合方法研究 ..... 张 锦,袁 晗(122)	深基坑自动化监测系统设计研究 ..... 朱 波,孙曼曼(184)
基于海洋地理信息系统的船舶轨迹异常检测分析 研究 ..... 李可欣,郭 健,王宇君,等(127)	建筑深基坑位移监测方法 ..... 朱增锋,李明月,罗盛楠(187)
广州市南沙区国土规划空间信息一体化平台建设 研究 ..... 张 琼,王颖芳,陈 萍(131)	公开地图中易出现的错误认知 ..... 王 琴,凌晓春,刘现印(191)
不动产登记空间数据库轮廓体更新方法 ..... 张洁玲(135)	机载 LiDAR 与倾斜摄影测量在大比例尺地形图测 绘中的应用 ..... 周玉岑,吴 际,李小龙(194)
基于“一张图”的土地执法监察管理平台设计与 实现 ..... 蒋芳芳,郝立贞(139)	基于雷达点云的小比例尺 DSM 生产关键技术研究 ..... 李小玲(197)
BDS、GPS、Galileo 两种三频 SPP 模型对比分析 ..... 翟栩弟,林 瑞(143)	基于三维激光扫描技术的新型地形测绘 ..... 裘烨栋,岳营丽(201)
基于残差网络约束的道路提取 ..... 王鑫鹏,吴 琦,张一雯(146)	基于时序 InSAR 技术的烟袋镇滑坡形变监测与分 析 ..... 管允粽,吴远昆,姚智博,等(204)
基于改进的二次曲面模型在 GPS 高程异常拟合中 的应用研究 ..... 孔昭龙(151)	无人机倾斜摄影在高生地滑坡灾害调查中的应用 ..... 董宏戈,徐 跃,龙 川,等(209)
中国及周边区域 BDS-3 不同星座与 Galileo 组合 SPP、PPP、RTK 性能分析 ..... 胡芳芳(154)	三维激光点云数据在城市建筑物高度监测中的应 用 ..... 王 莹,王振立,缪鹏飞,等(212)
梅河口市土地利用及水土流失现状分析 ..... 王 博(157)	面向变更调查的自动变化检测技术研究 ..... 司马依·麦麦提(214)
东莞市自然资源政务信息融合一体化业务系统建 设技术研究 ..... 刘嘉茵(160)	背包式三维激光扫描系统在测绘中的应用研究 ..... 谷彦斐,刘瑞昌,孔凡刚(218)
基于 RBF 神经网络的改进模型在电离层 TEC 预报 中的应用 ..... 胡文权(164)	高落差区域不同坐标转换方法及其精度分析 ..... 邵 恒,黄 燕(221)
浅析基于东莞三调的专项调查 ..... 李礼珍(168)	

## Doctor Column

- Main Urban District Identification Method Based on Multi-source Remote Sensing Images and Complex Network  
..... XIE Zhiwei, SHAN Jiaqiang, SUN Lishuang, et al.(1)
- Deformation Monitoring and Numerical Simulation of Deep Foundation Pit in Soft Soil Layer  
..... JIA Haipeng, HOU Liusuo(6)
- A Producing Mapping Rule Model for Multi-level Mapping Objects  
..... XU Li, SUN Qun, CHEN Huanxin, et al.(9)
- Exploration and Practice on Course Teaching Reform of "English Reading for Surveying and Mapping" Based on the Engineering Education Accreditation  
..... ZHANG Ying, NIU Xuefeng(13)
- Analysis of Drought Influencing Factors in Xiaoxing'anling Area of Heilongjiang Province Based on SPEI  
..... MEI Xiaodan, MAO Xuegang, WANG Qiang, et al.(16)

## Fund Projects Column

- Parameter Inversion of Probability Integral Method Based on P-SA-PSO Algorithm  
..... LIU Kuo, ZHANG Zhaojiang, ZHANG Liyuan, et al.(21)
- Visualization Analysis on Seismic Spatial and Temporal Distribution Characteristics Using POI Data  
..... GAO Pengcheng, WANG Shijie, LYU Jing, et al.(26)
- Research on Urban Development Boundary Prediction Based on FLUS-UGB Model:  
Taking Binzhou City as an Example  
..... CONG Tingting, DAI Zhaoxin, WU Pengda, et al.(30)
- Research on Feature Points Extraction Based on High-precision Trajectory Data  
..... LIANG Lifang, TIAN Shiyu, WANG Yanyun, et al.(36)
- Monitoring and Analysis of Urban Surface Settlement Based on Lifting Track Data  
..... ZHANG Mengru, FENG Zhili, PENG Zhuangzhuang(40)
- Semantic Segmentation of Indoor Point Cloud Based on Deep Residual Network and Gradient Optimization  
..... YANG Ying, DAI Chenguang, ZHANG Yingjian(44)
- Thinking about Land and Resources Data Management from the Perspective of Big Data  
..... WANG Xiaoyi, ZHANG Ruixin, ZHOU Yuke(48)
- Application of Weighted Moving Average and Curve Fitting Models in Subsidence Monitoring  
..... MENG Fanxiao, ZHANG Yuran, QUAN Ranran, et al.(51)

- Monitoring and Analysis of Geological Environment of Open-pit Mines:  
Taking Zhongliangshan of Chongqing as an Example  
..... WU Fengmin, YUAN Chao, YU Jing, et al.(55)
- Analysis on Spatial Distribution Characteristics and Influencing Factors of Rural Settlements in Xinyang City  
..... JIN Sai, JI Huifeng, SUN Meiru, et al.(59)
- Environmental Analysis System of Rare Earth Mining Area Based on OpenLayers  
..... NIE Shengdong, LIU Xian(63)
- A Horizontal Displacement Monitoring Method Based on Image Gray Change  
..... HE Yixin, WANG Lanfeng(67)
- Production of Overseas DEM Based on ZY-3 Satellite  
..... AN Jianying, YANG Zhongxiang, QIAO Zhongcheng, et al.(71)
- Web Gas Geological Map Publishing Technology Based on GeoServer  
..... YUE Jun(74)
- Research on the Construction of Natural Resources E-government Platform:  
Take Urumqi as an example  
..... MU Rong(78)
- Sparse Optical Flow Tracking Method for River Velocity Measurement Based on Image White Balance  
..... LIU Ya'nan, LI Haosheng, DENG Gang, et al.(81)
- Study on Cotton Planting Information Extraction Based on Sentinel-2A Remote Sensing Images  
..... QI Jiafeng, GUO Peng, XU Quan, et al.(85)
- Survey Experiment and Accuracy Analysis of High Speed Maglev Track Installation Measurement and Control Elevation Control Network  
..... YUAN Xin, YANG Xuefeng, TENG Huanle, et al.(89)
- Intelligent Traffic Information Acquisition Algorithm Based on LiDAR  
..... LIU Yazhou, DENG Anjian(93)
- Spatial-temporal Variability of Offshore Hydrocarbon Exploitation Activities in the Southern South China Sea from 2012 to 2019  
..... MA Rui, SONG Zixuan, RUI Qiyao, et al.(98)
- ## 3S Technology and Its Application
- Analysis on the Related Problems of Commercial GPS Adjustment Software  
..... ZHANG Zugan(103)

Research and Implementation of Safety Management Information System for Geological Exploration ..... LIU Tongwen, YU Guangting, HE Zuchen, et al.(106)	A Brief Analysis of the Thematic Investigation Based on the Third National Land Survey of Dongguan ..... LI Lizhen(168)	
Design and Implementation of Remote Sensing Image Cloud Service Platform in Fujian Province ..... HU Haiyan(108)	Research on Data Fusion of Geographical Conditions Monitoring and the Third National Land Survey Results ..... LI Xueqi(172)	
Research on Uncontrolled Mapping of GF-7 Satellite Image in Large Flat Area ..... HAO Lijuan, GUO Rubao(112)	Application of GF-7 Satellite in Basic Geographical Conditions Monitoring ..... YU Xuanbo(176)	
Independent Baseline Selection Method and Accuracy Analysis of GNSS Control Network ... HU Yuxiang, ZHANG Hongde, MENG Qingnian, et al.(116)	<b>S/M Engineering</b>	
Remote Sensing Monitoring of Human Activities in Guangxi National Nature Reserves ... LYU Huaquan, GUO Xiaoyu, OUYANG Yanmei, et al.(120)	Research on Application of 2D and 3D Integration Technology in Fundamental Surveying and Mapping Production ..... HU Hongyan, ZHANG Xinli, MA Wei(180)	
Research on Fusion Method of UAV Images and High Resolution Satellite Images ..... ZHANG Jin, YUAN Han(122)	Design and Research of Automatic Monitoring System for Deep Foundation Pit ..... ZHU Bo, SUN Manman(184)	
Ship Track Anomaly Detection and Analysis Based on Ocean Geographic Information System ..... LI Kexin, GUO Jian, WANG Yujun, et al.(127)	Displacement Monitoring Method of Building Deep Foundation Pit ..... ZHU Zengfeng, LI Mingyue, LUO Shengnan(187)	
Research on the Construction of the Spatial Information Integrated Platform for Land Planning in Nansha District of Guangzhou City ..... ZHANG Qiong, WANG Yingfang, CHEN Ping(131)	Misperceptions in Public Maps ..... WANG Qin, LING Xiaochun, LIU Xianyin(191)	
A Method for Updating the Contour of Real Estate Registration Spatial Database ..... ZHANG Jieling(135)	Application of Airborne LiDAR and Oblique Photogrammetry in Large-scale Topographic Mapping ..... ZHOU Yucen, WU Ji, LI Xiaolong(194)	
Design and Implementation of Land Law Enforcement Supervision and Management Platform Based on "One Map" ..... JIANG Fangfang, HAO Lizhen(139)	Research on Key Technology of Small Scale DSM Production Based on LiDAR Point Cloud ..... LI Xiaoling(197)	
Comparative Analysis of Two Triple-frequency SPP Models of BDS, GPS and Galileo ..... ZHAI Xudi, LIN Rui(143)	New Fundamental Surveying and Mapping Based on 3D Laser Scanning Technology ..... QIU Yedong, YUE Yingli(201)	
Road Extraction Based on Residual Network Constraints ..... WANG Xinpeng, WU Qi, ZHANG Yiwen(146)	Deformation Monitoring and Analysis of the Landslide in Yandai Town Based on Time Series InSAR Technology ..... GUAN Yunzong, WU Yuankun, YAO Zhibo, et al.(204)	
Research on Application of Improved Quadric Surface Model in GPS Height Anomaly Fitting ..... KONG Zhaolong(151)	Application of UAV Oblique Photogrammetry in Landslide Disaster Investigation in High Altitude Land ..... DONG Hongge, XU Yue, LONG Chuan, et al.(209)	
SPP, PPP, RTK Performance Analysis of Different BDS-3 Constellations and Galileo in China and Surrounding Areas ..... HU Fangfang(154)	Application of 3D Laser Point Cloud Data in Urban Building Height Monitoring ..... WANG Ying, WANG Zhenli, MIAO Pengfei, et al.(212)	
Analysis of Land Use and Soil Erosion Status in Meihekou City ..... WANG Bo(157)	Research on Automatic Change Detection Technology for Change Investigation ..... SIMA Yi Mamet(214)	
Research on Construction Technology of Integrated Business System of Natural Resources and Government Affairs Information Fusion in Dongguan ..... LIU Jiayin(160)	Application Research of Backpack 3D Laser Scanning System in Surveying and Mapping ..... GU Yanfei, LIU Ruichang, KONG Fangang(218)	
Application of Improved Model Based on RBF Neural Network in Ionospheric TEC Prediction ..... HU Wenquan(164)	Different Coordinate Transformation Methods and Precision Analysis in High Drop Region ..... SHAO Heng, HUANG Yan(221)	

8848.86m

珠  
穆  
朗  
玛  
峰

最新高度



刊号：ISSN 1672-5867  
CN 23-1520/P

广告经营许可证号：230103100219498  
邮发代号：14-5 定价：28.00元/期

ISSN 1672-5867



9 771672 586239