

2022 3rd International Conference on Geology, Mapping and Remote Sensing (ICGMRS 2022)

**Zhoushan, China
22-24 April 2022**

Pages 1-467



**IEEE Catalog Number: CFP22CC6-POD
ISBN: 978-1-6654-8596-8**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22CC6-POD
ISBN (Print-On-Demand):	978-1-6654-8596-8
ISBN (Online):	978-1-6654-8595-1

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

A Tunnel Crack Extraction Method Based on Point Cloud	1
<i>Xiaonan Wu, Ziyu Liu, Ming Huang</i>	
The Use of SAR Offset Tracking for Detecting Mountain Glacier Movement	5
<i>Zongrui Gu, Chenhao Ma, Xuqing Zhang, Mingchang Wang</i>	
TOPS model image registration study in topographic undulating areas	11
<i>Wenting Liu, Lihua Han, Jie Yu</i>	
Tropical Cyclone Rainbands in SAR Images	15
<i>Han Jiang, Yinfei Zhou, Gang Zheng, Xiaofeng Li, Bin Liu, Lizhang Zhou, Peng Chen</i>	
CFD analysis of jet fan layout optimization at intersection of branch tunnel and main tunnel	20
<i>Jie Xu, Qingwen Zhang</i>	
Multi-element quantitative extraction of mining area of laterite nickel mine combined deep learning with object-oriented method	24
<i>Xian Zhang, Li Chen, Wei Li, Yu Li</i>	
Numerical simulation of typhoon waves in Sanmen Bay	29
<i>Feng Wang, Yang Zhou</i>	
Comparative study on Extraction of banded water and surface water in urban area based on MNDWI	33
<i>Xu Zhang, Xianglei Liu</i>	
Comprehensive evaluation of soil moisture in farmland based on Ensemble Empirical Mode Decomposition and Partial Least Squares Regression	41
<i>Xiaodan Wang, Xuqing Li, Yongtao Jin, Liang Zhang, Chenyu Zhao, Wenlong Zhang</i>	
Research on multi-level point cloud classification method of underground tunnel	52
<i>Zhihua Xiao</i>	
Liujiaxia Area Potential Landslides Identification and Analysis Based on InSAR Technology	57
<i>Miaomiao Xu, Ping Du, Yi He, Tao Liu</i>	
Changes and Sensitivity Analysis of Ecosystem Services of New Urban Areas in Guanshanhu District, Guiyang, Guizhou Province, China	62
<i>O. Deng, Y Q. Li</i>	
Coordinated Variation of Precipitable Water Vapor and Rainfall during Typhoon	69
<i>Qin Wang, Yibin Yao, Chen Liu, Chaoqian Xu</i>	
Impacts of land reclamation on hydrodynamics in Zhoushan Archipelago	74
<i>Jiahao Zhu, Yanming Yao, Li Li, Weibin Guan</i>	
A constant slope surface and its application	78
<i>Fangxiao Zhou</i>	
Analysis of the effect of mud-water balance shield on soil through water-rich sand layer	82
<i>Shaopeng Wen, Hongxiang Yan, Wenhao Liu, Jianxun Ma, Shaopeng Wang, Chuigang Kong, Yilei Zhang, Wenxiao Li</i>	
Research on the Influence and Control Measures of Excavation of Deep Foundation Pit Adjacent to Rail Transit	87
<i>Bo Jiang, Jing Wang, Wanxue Long, Xiehui Luo</i>	

Research on hydrogeological conditions based on ArcGIS-taking Yongding River's ecological water supplement as an example	92
<i>Qiaohui Wang, Guohua Chen, Yingzhen Huang, Qi Wang, Lili Cao</i>	
Design and Implementation of Geological Data Management Platform based on WebGIS	96
<i>Jinku Huang, Ping Li, Yuxing Lou, Yingru Pei</i>	
Dynamic penetration test based on YOLOv5	102
<i>Zhengyu Zhang, Fan Yao, Jun Li</i>	
A Novel Unsupervised Evaluation Metric for SAR Image Segmentation Results	106
<i>Hang Yu, Xiangjie Yin, Zhiheng Liu, Zichuan Xie, Suiping Zhou, Yuru Guo</i>	
A Novel Nighttime Dehazing Model Integrating Retinex Algorithm and Atmospheric Scattering Model	111
<i>Hang Yu, Chenyang Li, Zhiheng Liu, Yuru Guo, Zichuan Xie, Suiping Zhou</i>	
Quantitative Evaluation of Digital Orthophoto Map	116
<i>Fujun Luo, Cheng Li, Hongyan Hu</i>	
Stacked Mixture-of-Expert Networks for Fast Aerial Scene Classification	121
<i>Junwei Xie, Fan Yu, Haonan Wang</i>	
Extraction of Complex Buildings in the Karst Mountains Based on U-Net Deep Learning Model	127
<i>Qianxia Li, Zhongfa Zhou, Denghong Huang, Dongna Xiao, Lihui Yan, Youyan Huang, Yang Zhang</i>	
Construction and Optimization Method of Large-scale Space Control Field based on Total Station	139
<i>Yan Liang, Rong Xie, Changqing Liu, Aiqing Ye</i>	
An improved morphological edge detection algorithm	144
<i>Zehao Yin, Ziyu Liu, Ming Huang</i>	
Research on Quality Evaluation of Large Scale Topographic Update Database	150
<i>Jin Bai, Jingnan Gao, Wei Ma, Yu Dang, Chenni Lu, Chang Liu, Shuai Dong, Hai Li</i>	
Reserch of Digital Predistortion for Ultra Wideband LFM signal	154
<i>Tong Jiang, Bin Li, Baohua Sun, Xiaoqing Ma</i>	
Comparison of landslide detection based on different deep learning algorithms	158
<i>Wenjie Zhang, Zhiheng Liu, Hang Yu, Suiping Zhou, Haoran Jiang, Yuru Guo</i>	
Research of Construction of Large-scale Control Networks Based on GXCORS and Data Processing Technologies	163
<i>Conglin Zhou, Chaoming Liao, Bo Shi, Maohua Yao, Xiangping Chen, Yifei Yang</i>	
Deep learning pre-stacked seismic velocity inversion using Res-UNet network	171
<i>Fangda Li, Zhenwei Guo, Bochen Wang, Longyun Hu</i>	
Analysis and comparison of denoising methods for photon-counting laser data	175
<i>Jingyun Liu, Jun Liu</i>	
Prediction of Near-surface Air Temperature at Glacier Region using ERA5 Data based on Random Forest Regression method	179
<i>Yifei He, Junji Li, Fengdong Bi, Yong Mao, Bin Li, Chao Chen, Yanli Chu</i>	
SAR Image Segmentation by Merging Multiple Feature Regions	183
<i>Hang Yu, Haoran Jiang, Zhiheng Liu, Yibo Sun, Suiping Zhou, Qianyu Gou</i>	
Accuracy Assessment of ZY-3 Stereo Images in Electric Power Engineering Survey	187
<i>Shouchao Hu, Yaguang Zhu</i>	

Research on Key Technologies of 3D Real Scene Visualization Based on Multi-source Observation Data Fusion	191
<i>Qiang Jing, Hongzhi Miao, Xiaowei Yang, Huifang Ming, Hui Yin</i>	
Tectonic Geomorphology Analysis based on Digital Elevation Model in West Junggar	197
<i>Lele Han, Weicui Ding, Xuanhua Chen, Da Zhang, Shenglin Xu, Ye Wang, Zengzhen Wang</i>	
Successive Projections Algorithm for Feature Bands Extraction of Suspended Sediment Concentration from Airborne Hyperspectral	203
<i>Hui Li, Kuifeng Luan, Wei Shen, Jie Wang, Weidong Zhu, Hang Xu, Zhengge Qiu, Haixia Wan, Wei Liu</i>	
Building footprint extraction model based on deep supervision and post-processing technology	209
<i>Tong Yu, Panpan Tang, Haoming Wan, Li Sheng</i>	
Study on Geographically Attribute Neural Network Weighted Regression	213
<i>Feng Jiang, Chunyu Li</i>	
Seabird statistics in coastal wetlands based on aerial views from drones	219
<i>Haoyun Wu, Yunfeng Tang, Hong Zheng, Zheng Zhang, Xufeng Zhang</i>	
Multi-beam Data Automatic Filtering Technology	224
<i>Yu Yan, Linfeng Yuan, Longjian Ran, Hui Yin, Xuelu Xiao</i>	
Analysis of water surface area variation of Hanfeng Lake in the Three Gorges Reservoir Area based on Microsoft Planetary Computer	229
<i>Kebing Chen, Shengwei Li, Sirui Sun, Qikai He</i>	
Building Segmentation of UAV-based Oblique Photography Point Cloud Using DoPP and DBSCAN	233
<i>Guo Wang, Qiang Wang, Ruishan Zhao, Chao Chen, Yan Lu</i>	
Novel structural design method of special-shaped lightweight aluminum mirror for space spectrometer	237
<i>Dazhou Xiao, Like Wang, Chao Han, Yuxiang Liu, Ruicong He, Qian Cao</i>	
Multi-type road extraction and analysis of high-resolution images with D-LinkNet50	244
<i>Shenglong Li, Xianglei Liu</i>	
A Similarity Measurement Model of Complex Polygon with Holes Based on Fuzzy Matrix and Similarity Transformation	249
<i>Qin Zong, Kuan Tian, Qiu Zuo, Wenjing Wang</i>	
Research on Blind path Obstacle ranging based on improved ORB Feature Matching	253
<i>Yongquan Xia, Yiqing Li, Jianhua Dong</i>	
Short-term Traffic Flow Prediction based on GMO-DELM	260
<i>Zhiyan Tian, Di He</i>	
Construction of basic geospatial information framework in Huludao City	265
<i>Songyan Wang, Ye Wen, Zhe Wang</i>	
A study of microseismic first arrival pickup based on image semantic segmentation	269
<i>Mingyue He, Peifan Jiang, Fei Deng</i>	
Application of GA-BP neural network in prediction of chl-a concentration in Wuliangsu Lake	275
<i>Ge Gao, Xueliang Fu, Honghui Li, Hua Hu, Wenyao Liu, Dawei Ren</i>	
Spatial-temporal characteristics of vegetation coverage and its relationship with environmental factors in the Three-river headwaters region	282
<i>Weiye Huang, Xiaoyan Chang, Qilin Qu, Jianzhou Bai</i>	
Research on the application ability of GaoFen satellite data in monitoring changes in mine land use	289
<i>Jing Wen, Fan Bu, Cai Liu, Liangting Wu</i>	

Center-to-Corner Vector Guided Network for Arbitrary-Oriented Ship Detection in Synthetic Aperture Radar Images	293
<i>Man Xiao, Zhi He, Anjun Lou, Xinyuan Li</i>	
Spatio-Temporal Change of County Vegetation Net Primary Productivity in Qinghai Silk Road region	298
<i>Cheng Hu, Yungang Cao</i>	
Research and Application Progress for Ultra-deep Pipeline Detection Technology in China	304
<i>Bo Zeng, Hanchun Zhang</i>	
Spatio-temporal Characteristics of Vegetation Coverage in the Open-pit Mine Waste Dump of Baorixile Based on Landsat Images	308
<i>Ziheng Song, Junting Guo, Jun Li, Chengye Zhang, Fei Wang, Liping Sun</i>	
Research and Practice in Aquaculture Safety Monitoring based on Multi-source Information Fusion	313
<i>Yangyan Huang, Huan Hu, Fei Yuan, En Cheng, Junwei Dai</i>	
Ecosystem-based disaster risk reduction interpretation of landscape pattern changes based on Land use changes in Tokyo and Shanghai	319
<i>Minghui Tang, Naoko Fujita</i>	
Application Research of Vehicle-borne LidAR in Highway Information Management	323
<i>Guofei Wang, Zhen Li, Wenqi Li, Yu Jiang</i>	
Study on Fish Resource Assessment Method Based on Imaging Sonar	327
<i>Zhiqiang Cui, Hanhao Zhu, Chao Chen, Wei Liu, Qile Wang, Zhigang Chai</i>	
Array Gain Prediction of Horizontal Line Array Using Monitoring Sea Surface Fluctuations	332
<i>Yuan Gao, Guangying Zheng</i>	
Super-resolution beamformer with coherence factor treatment	338
<i>Chao Li, Haisen Li, Qijia Guo, Jian Wang</i>	
Research on the test and calibration method of microgravity detection of urban underground space	345
<i>Jinlin Bai, Jingtao Li, Han Lu</i>	
Research on fine 3D modeling technology of tall buildings based on UAV Photogrammetry	349
<i>Youmei Han, Shuai Zhou, Panrui Xia, Qun Zhao</i>	
Information Extraction with Hierarchical Multi-scale Segmentation and Dynamic Change Analysis in Myanmar Tagaung Taung Nickel Mine	354
<i>Li Chen, Xian Zhang, Wei Li, Yu Li</i>	
Application of Interferometric Synthetic Aperture Radar Technology in monitoring coal mining subsidence area of Liaoyuan	359
<i>Hailong Sun, Yingxin Liu, Xuguang Lin, Hongye Wang</i>	
Calibration method for installation error of ultra-short baseline based on quaternion	363
<i>Yu Luo, Mengdi Cheng, Qianqian Li, Xizhao Song</i>	
Research on Model-Based Signal Localization Processing for Waveguide with Elastic Seabed	368
<i>Yaqin Liu, Yan Liu, Xian Zhu, Yanyu Chen</i>	
Analysis for temporal and spatial changes of the mainland shorelines of Cambodia from 1995 to 2020	373
<i>Panpan Zhang, Xin Teng, Qiwei Zhao, Shuang Wang, Wanchao Kang, Zhineng Wang</i>	
Surface deformation monitoring in Dongchuan urban area between 2018-2020 based on PS-InSAR	379
<i>Xiaolun Zhang, Huilin Zong, Haibo Yang, Yan Li, Yanyan Shao, Lin Hu</i>	

Extraction of lakes using Gaofen-1 WFV camera data in Zhoushan Island, China	383
<i>Xin Li, Xin Zhou, Liyan Wang, Bin Li, Chao Chen, Yanli Chu</i>	
Dual Redundant UAV Path Planning and Mission Analysis Based on Dubins Curves	387
<i>Xiaotong Lu, Junhao Wan, Yuanhao Zhong, Ji Wang</i>	
First Exploration for High Resolution Spaceborne P-band Synthetic Aperture Radar Imaging	391
<i>Xuelian Zhong, Hong Hu, Rengli Liu</i>	
A Position Extraction Method Combining Visual Saliency and Line Segment Intensity	395
<i>Xiaoyu Chang, Min Wang, Gang Wang, Feng Gao</i>	
Dynamic monitoring and analysis of ecological environment quality in Zhoushan Archipelago based on the Google Earth Engine	399
<i>Liyan Wang, Chao Chen, Zili Zhang</i>	
Distribution characteristics of tidal currents in Zhoushan multi wharf sea area based on field observation	404
<i>Weiqi Xiao, Xiaoran Wu, Lijing Yang, Yun Pan</i>	
Application of multi-platform LiDAR in the construction of slow traffic system	408
<i>Guofei Wang, Zhen Li, Jiyang Yan, Gang Wang</i>	
Research on Layered Settlement Monitoring System of Airport High Filling Slope Based on Fiber Grating Technology	412
<i>Kunyang Zhao, Geng Ren, Panfei Zheng, Bo Li, Zonghe Li</i>	
Research on localization method of acoustic beacon under cross-domain cooperation	417
<i>Chuanxi Xing, Jiayuan Jiang, Zhiliang Wan, Yi Xu</i>	
Integration and Test of Domestic Gravity Measurement System	421
<i>Shihua Liu, Rui Li, Hao Chen, Ran Duan, Shengbo Geng, Yi Yang, Yongze Ju</i>	
A full coverage path planning method for unmanned surface vessels	428
<i>Zhihao Han, Yongzhi Hao, Yu Zhang</i>	
Rapid elevation reconstruction method of linear suspended objects based on DEM	434
<i>Na Jiang, Yongliang Guo, Xiaochun Ling, Haifeng Han</i>	
A study on Integrated Natural Zoning based on ArcGIS Technology	438
<i>Zhenzhen Zhao, Yawen Yang</i>	
Retrieval of Water Parameters from Absorption Spectrum Based on Convolutional Neural Network	442
<i>Yuyang Liu, Xueji Wang, Xiao Liu, Hong Liu, Jiacheng Liu, Quan Wang, Tao Yu</i>	
Underwater Small Object Detection in Side-Scan Sonar Images Based on Improved YOLOv5	446
<i>Shunan Fu, Feng Xu, Jia Liu, Yan Pang, Juan Yang</i>	
An Airborne SAR Radiometric Calibration Method with Random Constrained Evolution	454
<i>Xi Chen, Han Cao, Lingma Sun, Lieshu Tong</i>	
Monitoring and analysis of land subsidence in Beijing based on SBAS-InSAR Technology	458
<i>Guangtong Sun, Ping Song, Xiaoyang Liu, Hongda Jia</i>	
Three Camera Lens Distortion Correction Models and Its Application	462
<i>Luyao Wang, Guolin Liu</i>	
Study on suitability of distribution and spatial utilization pattern of surface resources in Tongchuan City	468
<i>Miao Liu, Feng Yue, Xitao Huang, Xiaorong Jia</i>	

Threat Level Assessment by Imaging Reconnaissance Satellite to Ground Target Based on Fuzzy Evaluation	473
<i>Jian He, Shenyi Cao, Yu Cheng, Xiaotong Deng, Hao Li, Ze Zhang</i>	
Research on Improvement of Landscape Expansion Index and Its Application based on GIS	478
<i>Lu Liu, Minzhi Xiao, Youyue Wen, Hongyan Kuang, Ziyi Yang</i>	
Research on Building Extraction method based on Object-oriented and ArcGIS Engine	483
<i>Jinku Huang, Ping Li, Wenlei Wang, Yingru Pei</i>	
Research on geospatial data visualization based on GIS and reverse proxy	489
<i>Jinku Huang, Ping Li, Wenbin Zhu, Qingling Sun</i>	
Foggy Weather Monitoring Method Based on Improved Deep Residual Shrinkage Network and Radio Signal	495
<i>Qian Cheng, Zhongdong Wu, Jie Min</i>	
Exploration on the coordination mode of urban and rural areas in Jianli City under the perspective of GIS	500
<i>Jun Shao, Shuaikang Zhang, Yanfeng Sun, Jiao Cai, Jiaxin Tang</i>	
Faults System Analysis of the West Junggar Region Based on Remote Sensing	505
<i>Weicui Ding, Lele Han, Shenglin Xu, Xuanhua Chen, Zengzhen Wang, Ye Wang</i>	
Thick Cloud Removal and Reconstruction for Remote Sensing Images Using Attention-based Deep Neural Networks	511
<i>Yidan Wang, Qinchuan Xin, Kun Xiao</i>	
Dynamic Monitoring and Change Analysis of the Coastline with Remote Sensing in Zhongshan City	515
<i>Yu Bian, Yongpeng Yang, Ya Guo, Ling Chen</i>	
Extraction of aquaculture ponds based on U²-net using remote sensing images in the Liuheng island, China	522
<i>Zhisong Liu, Zhaohui Zou, Chao Chen, Zili Zhang, Yao Chen</i>	
Spatial Structure Identification of Urban Agglomeration in Liaoning Province Based on Luminous Data and Graph Theory	526
<i>Zhiwei Xie, Ruizhao Liu, Chao Huang, Guangming Song</i>	
Research on Remote Sensing Intelligent Extraction Method of Supporting Facilities in the Community Based on Deep Learning	531
<i>Yaqing Bai</i>	
Extraction of built-up areas from nighttime light images based on improved DeepLabV3+ network	535
<i>Anxiang Wang, Ke Liu, Linshan Zhong</i>	
Decision Calibration Network for Semantic Labeling of High-Resolution Remote Sensing Images	542
<i>Haiwei Bai, Jian Chen, Qi Wang, Changtao He</i>	
Analysis on Land-Use/Cover Change in Hangzhou Bay, China during 2000–2020 Using the Google Earth Engine	546
<i>Jintao Liang, Chao Chen, Haozhe Sun, Zili Zhang</i>	
Research on Spatial-Temporal Variations of Fractional Vegetation Covers Based on Remote Sensing	550
<i>Songyan Wang, Yue Sun, Ye Wen, Zhe Wang</i>	
Current Situation of Denoising And Target Detection In Hyperspectral Images	555
<i>Guanzhe Li, Hongxiong Hao, Lingda Wu, Boyu Liu</i>	
Development of Telemetry Wave Instrument Based on MEMS Sensing Technology	560
<i>Sujun Yang, Jiacheng Shen, Panhao Shi, Xiang Ma</i>	

Research and Analysis on the Angles Normalization of the Domestic GF-1 Satellite Based on MODIS BRDF Products	565
<i>Yuhao Tan, Xiaomeng Li, Xiufeng Yang, Yongtao Jin</i>	
Evaluation of Carbon Sink Capacity of Tree Species in Gansu Province based on Remote Sensing Data	574
<i>Shufu Lin, Ying Ding, Sheng Gao</i>	
Building Instance Change Detection from High Spatial Resolution Remote Sensing Images with Improved Instance Segmentation Architecture	581
<i>Li Yan, Jianbing Yang, Yi Zhang</i>	
Remote Sensing Image Change Detection Based on Attention and Convolutional Neural Network	588
<i>Jinming Ma, Di Lu, Gang Shi, Yanxiang Li</i>	
Remote Sensing Monitoring of Land Use Change in Jinan	594
<i>Rui Wang, Huan Wang, Wenlong Yu, Rubing Huang</i>	
Comparison Graph Neural Networks for Remote Sensing Scene Classification	598
<i>Yuan Wang</i>	
Linear Structure Extraction and Analysis of Remote Sensing Information in Postmasburg Region, South Africa	603
<i>Haoxiang Shao, Dayong Yang, Honglun Chang</i>	
Research on General System of Remote Sensing Satellite Data Preprocessing Based on MPI + CUDA	607
<i>Xin Wang, Renzhong Yang, Xinzhu Liu</i>	
Spectral index-spatially correlated water extraction method based on GF-5 hyperspectral satellite images	613
<i>Jinhui Lan, Yunkang Guo, Longyue Zhang</i>	
Research on UAV remote sensing multispectral image compression based on CNN	619
<i>Mengxu Zhu, Guohong Li, Wenhao Zhang</i>	
MDNet: A Multi-modal Dual Branch Road Extraction Network Using Infrared Information	626
<i>Yuxuan Gu</i>	
Quantitative analysis of urban development and changes around urban airports based on high-resolution remote sensing images	632
<i>Xufei Wang, Yanyi Li</i>	
Evaluation of ecological environment quality in some regions of Tianjin based on remote sensing ecological index	637
<i>Ruiyan Fan, Yue Ti</i>	
Spatial distribution features extraction of SST in Xiamen Bay and adjacent waters based on remote sensing technology	641
<i>Lu Huang, Caiyun Zhang, Yi Zhu, Xiaoming Guo</i>	
Research on flood remote sensing monitoring based on multi-source remote sensing data	646
<i>Wenjie Zhang, Yilin Dong</i>	
Study on Urban Poverty Rate based on Luminous Remote Sensing Data	650
<i>Haotian Zheng, Fan Yu, Hanxiang Wang</i>	
Identification of multi-center spatial structure in Beijing core area based on multi-source data	658
<i>Jing Hu, Lujin Hu, Jian Wang, Zheng Wen</i>	
Experimental study on remote sensing observation of extinction coefficient of smoke aerosols	662
<i>Shiting Sheng, Jun Pan, Lijun Jiang, Yehan Sun</i>	

Research on spatio-temporal fusion algorithm of remote sensing image based on GF-1 WFV and Sentinel-2 satellite data	667
<i>Shengbo Wang, Xiufeng Yang, Guohong Li, Yongtao Jin, Chuanzhao Tian</i>	
A Weakly Supervised Landslide Extraction Method from Remote Sensing Images Using Deep Attention and Multi-feature Fusion	679
<i>Xu Deng, Li Shen, Xin Yan, Dangxin Zheng</i>	
Comprehensive Evaluation of Eco-environmental Quality in Guanzhong Urban Agglomeration Based on Multi-source Remote Sensing Data	685
<i>Kailei Xu, Yuqing Wan, Jun Chen, Jianhua Qiang</i>	
Research on Remote Sensing Retrieval of Chl-a Concentration in the Jiaozhou Bay, Qingdao Based on Semi-analytical/Semi-empirical Model	695
<i>Anqing Ma, Xia Yan, Yunxia Wang</i>	
Remote sensing of chlorophyll concentration based on HJ-1 satellite in Lake Tai, China	706
<i>Zhisong Liu, Xuebing Yang, Fengdong Bi, Yong Mao, Bin Li, Chao Chen, Yanli Chu, Yao Chen</i>	
Study on the Performance Testing of HgCdTe Infrared Detectors in front of the Cryogenic Blackbody	711
<i>Xiaoman Li, Feng Zhou, Wenpo Ma</i>	
Construction of Terrain Information Extraction model in the Karst Mountainous Terrain Fragmentation Area Based on UAV Remote Sensing	716
<i>Dongna Xiao, Zhongfa Zhou, Qianxia Li, Denghong Huang, Zhu Meng, Yang Zhang</i>	
Analysis of Spatial and Temporal Characteristics of Drought in Northwestern Liaoning Based on MODIS Data	728
<i>Huan Zhang, Ye Wen, Zhenxing Bian</i>	
VMD-Inspired Bidirectional LSTM for Anomaly Detection of Hyperspectral Images	735
<i>Zhi He, Man Xiao, Dan He, Anjun Lou, Xinyuan Li</i>	
Remote Sensing Monitoring of Dynamic Change in Woodland-Grassland-Wetland: an Example from Northern Zhangjiakou-Chengde, China	740
<i>Wenjuan Li, Xiaoxia Ren, Aifang Jing, Jing Han, Bo Xing</i>	
Remote sensing algorithms of seawater transparency: A review	744
<i>Chunyan Zhao, Dingfeng Yu, Lei Yang, Yan Zhou, Hao Gao, Xiaodong Bian, Yaning Li</i>	
Discussion on Remote Sensing Evaluation Factors and Evaluation Models of Basic Quality of Urban Ecological Environment	750
<i>Xiaocui Fan, Zhen Chen</i>	
Super-resolution of infrared images based on hierarchical distillation network	756
<i>Wei Cai, Bo Jiang, Xinhao Jiang</i>	
Classification of Yellow River Estuary Wetland based on hyperspectral remote sensing imagery	762
<i>Yuxuan Zhang, Xiangliang Meng, Fei Meng, Pingjie Fu</i>	
Research on the optimization of the resilience of urban livelihood supply facilities based on remote sensing technology	767
Take the central city of Hefei as an example	767
<i>Ruipeng Zhang, Changquan Su, Junwei Huo, Xinran Fang, Kun Wu</i>	
Study on Remote Sensing Monitoring of the Thermal Discharge in Songyu Power Plant Based on Landsat8 Satellite Data	771
<i>Lu Huang, Xing Liu</i>	

Research on the Application of Remote Sensing Monitoring to Flood Monitoring Based on Sentinel-1A in Linyi City	775
<i>Chao Diao, Guoqing Sang, Junnuo Wang</i>	
Effect of seamount on low frequency acoustic propagation based on time domain	780
<i>Huang Yan, Zhigang Chai, Hanhao Zhu, Qile Wang, Zhiqiang Cui, Yize Wang</i>	
Influence of Sea Bottom Friction Coefficient on tidal modeling around the Coast of China	784
<i>Congying Kong, Chunhui Li</i>	
Sea ice classification from Sentinel-1 data	790
<i>Hao Yu, Zhongxiang Tian, Chunhua Li</i>	
Displacement prediction of rainfall induced landslide based on AdaBoost BP neural network	794
<i>Feifei Tang, Xifei Wang, Zhangpeng Wang, Min Xiao, Ying Ma, Yun Wan</i>	
An Adaptive Seawater Index Algorithm on GEE	
an adaptive seawater index algorithm map function based on optical RS on GEE with JavaScript API	800
<i>Mengyao Shen, Zhengcai Liu</i>	
Analysis of the effect of differences in the base value of geomagnetic daily variation on marine magnetometry	805
<i>Zequn Hu, Shaohua Jin, Gang Bian, Yang Cui</i>	
Influence of upslope seabed on low frequency acoustic propagation characteristics in shallow sea	810
<i>Ying Zhang, Qile Wang, Hanhao Zhu, Zhigang Chai, Zhiqiang Cui, Fan Yang</i>	
A Sea Ice Detection Method Combining U-Net and Biased Position Attention	814
<i>Guang Gao, Ying Jin</i>	
Accuracy Analysis of Interpolation Method for Abrupt Change of Seabed Water Depth	818
<i>Huadong Ma, Haiying Zhou, Yubo Wen, Ping Wang</i>	
Analysis on Several Influencing Factors of Underwater Gravity Gradient Navigation	822
<i>Pengfei Xian, Bing Ji</i>	
E-Band Propagation Measurements and Initial Analysis for Long-Range Communication Over Sea	828
<i>Hang Yang, Haifeng Mou, Chengnan Sun, Zhenyang Guo, Xichen Liu, Siran Ding, Xianbing Zou, Xiang Gao</i>	
Wildfire risk assessment based on Light Gradient Boosting Machine model	833
<i>Feng Xiao, Guanyu Lin, Tianyu Li, Jiaying Li, Jiaqing Zhang</i>	
Research on hydrodynamic characteristics of an offshore flexible floating photovoltaic in waves	841
<i>Xiaoran Wu, Weiqi Xiao, Lijing Yang, Yun Pan</i>	
Uncertainty Modeling of Crowdsourced Bathymetry Data Influenced by Marine Environment	846
<i>Shuaidong Jia, Zhicheng Liang, Lihua Zhang, Hao Yuan</i>	
Location calculation of magnetic survey points considering the influence of sea breeze and currents	853
<i>Gang Bian, Shaohua Jin, Zequn Hu, Qiang Liu, Meina Wang, Chao Sun</i>	
Two-dimensional Gauss-Newton inversion based on marine CSEM data	859
<i>Tianyu Guo, Zhenwei Guo, Ying Liu, Jianxin Liu</i>	
A fast inversion method of marine environment parameters based on bottom reflection phase shift	863
<i>Xiaoman Li, Xuejie Bi, Hongyun Chen, Hongyu Lu</i>	
Application of ArcGIS in the analysis of ship traffic flow over a cross-sectional gate line	869
<i>Wei Fang</i>	

A method for detection and parameter inversion of ocean eddies in SAR images	874
<i>Xiaoyi Lu, Yongqiang Chen, Chunle Wang</i>	
Influence of shallow ocean front on propagation characteristics of low frequency sound energy flow	878
<i>Qile Wang, Hanhao Zhu, Zhigang Chai, Chao Chen, Zhiqiang Cui</i>	
A Neural Network Model-Based Inversion Method for Stratified Seafloor Geoacoustic Parameters in Shallow Water	882
<i>Xiaorou Zhang, Hanhao Zhu, Zhiqiang Cui, Wei Liu, Qile Wang, Zhigang Chai</i>	
Research on ocean observation data transmission based on blockchain technology	887
<i>Yubo Wen, Ping Wang, Huadong Ma, Haiying Zhou</i>	
Research on the Application of UHF-band Scatter Communication Technology based on Island Marine Data Transmission	893
<i>Tianzhao Liu, Zhihua Guo, Dexing Wang, Fei Wang, Bing Wang, Jing Zhang</i>	
Effect of seamount on low frequency acoustic propagation characteristics in shallow sea	899
<i>Zhigang Chai, Wei Liu, Hanhao Zhu, Qile Wang, Zhiqiang Cui, Wenjie Wang</i>	
Seafloor Classification based on Sub-bottom Profiler Data using Random Forest	903
<i>Yu Luo, Xu Zheng, Jian Shi, Jin Huang</i>	
GIS application in environmental monitoring and risk assessment	908
<i>Li Chen, Yiyang Mao, Ruotong Zhao</i>	
Model Driven Architecture In GIS-based DSS for flood management	918
<i>Wei Zhang, Xiao Chen</i>	
The Development History of Geological Hazard Investigation Work Based on Remote Sensing Technology	
- Taking Shandong Province as an Example	922
<i>Fanqi Meng, Chao Jia, Xinghui Wang, Feng Gao, Jingbing Liu, Ming Shao, Hao Dong</i>	
Quantitative monitoring of sugarcane typhoon disaster based on multi-source remote sensing data	926
<i>Lisha Qian, Shuisen Chen, Hao Jiang, Xuemei Dai, Kai Jia</i>	
Location-based Safety Risk Information Exchange Method for Intelligent Ships	931
<i>Jianan Luo, Lijiang Gui, Zhaoyan Qian, Shunliang Gu, Xiongfei Geng, Duan Jing</i>	
Author Index	