

2012 20th International Conference on Geoinformatics (GEOINFORMATICS 2012)

**Hong Kong, China
15 – 17 June 2012**



**IEEE Catalog Number: CFP1232H-PRT
ISBN: 978-1-4673-1103-8**

TABLE OF CONTENTS

Mobile Spatial Interaction in the Future Internet of Things	1
<i>J. Carswell, J. Yin</i>	
Object-Oriented Land Cover Classification Of HJ-1B CCD Image Through Multiple Classifier Fusion	7
<i>J. Xu, W. Ju, Z. Hu</i>	
A Distributed Geospatial Data Storage and Processing Framework for Large-Scale WebGIS	13
<i>Y. Zhong, J. Han, T. Zhang, J. Fang</i>	
The Measurement Study Of Fire-Fighting Spatial Accessibility In Beijing Based On M2FCA	20
<i>X. Niu, X. Li, Y. Sun, N. Peng, F. Wang</i>	
The Application of Fractal Theory in Assessing Chlorophyll Content Using Hypersectral Data	25
<i>Y. Xiao, L. Li, H. Gong, D. Zhou</i>	
Visual Data Exploration of Space-Time Characteristics of Mesoscale Eddies in the South China Sea: A Cube-Based Approach	30
<i>J. Yi, Y. Du</i>	
Remote Sensing Algorithm Platform in Windows Azure	35
<i>D. Gan, K. Du, Y. Zhang, L. Liu, Y. Qu</i>	
Rapid Extraction of Pakistan Floods from TM Images	41
<i>R. Zhang, Y. Sun</i>	
Assessment of Wetland Ecological Health in Honghe from 1975 to 2006	45
<i>Y. Zhang, Y. Wang, D. Zhou</i>	
Denosing of Hyperspectral Imagery Using a Spatial-Spectral Domain Mixing Prior	50
<i>S. Chen, X. Hu, S. Peng</i>	
Using SOM and DBSCAN-based Models for Landslide Hazard and Spatial Correlations Analysis: A Case Study in Central Taiwan	57
<i>P. Huang, W. Chou, W. Lin</i>	
Using An Improved Spatial Clustering Model for Evaluation of Industry Agglomeration	62
<i>P. Huang, T. Chou, W. Lin</i>	
The Method for Rapid Extraction of Vegetation Supply Water Index: Using HJ-1B Satellite Data	66
<i>Z. Hu, M. Guo, M. Jiang, L. Wei, S. Zhang</i>	
An Image Fusion Method Based on Region Segmentation and Wavelet Transform	70
<i>P. Sun, L. Deng</i>	
Identification of Key Changed Land Use Type in LUCC: A Case Study of Guishui River Basin	75
<i>P. Wu, H. Gong, D. Zhou</i>	
Accumulated Similarity Surface for Spatial Interpolation	80
<i>K. Yang, Y. Chen, M. Li</i>	
On the Use of Cloud Computing for Geospatial Workflow Applications	84
<i>X. Ji, B. Chen, Z. Huang, Z. Sui, Y. Fang</i>	
Improving Monte Carlo Localization Algorithm Using Genetic Algorithm in Mobile WSNs	90
<i>Y. Liu, H. Yu, B. Chen, Y. Xu, Z. Li, Y. Fang</i>	
Study on Industrial Land Consolidation Based on GIS—Take an Example of Wujin District, Changzhou, China	95
<i>X. Ma, M. Li, Y. Wang, S. Yan, X. Jiang, F. Li</i>	
Multi-type Sweeping for Improving the Efficiency of Flow Accumulation Calculation	99
<i>Y. Yao, H. Tao, X. Shi</i>	
Remotely Sensed Groundwater Storage Variations in Hai River Basin, China	103
<i>H. Xu, Y. Pan, H. Gong, D. Zhou</i>	
A Novel Parallel Depression Removing Algorithm for Hydrology Analysis in Digital Elevation Models	108
<i>X. Song, G. Tang, L. Jiang, G. Zhang, K. Qian</i>	
An Automatic Sorting Approach of Surface Bundle Based on the Shared Space Curve	112
<i>C. Yu, S. Ying, B. He, Z. Zhao</i>	
High-Precision DEM Production In Complex Urban Area Using LiDAR Data	118
<i>W. Han, Y. Li</i>	
Object-Oriented Remote Sensing Imagery Classification Accuracy Assessment Based on Confusion Matrix	123
<i>L. Yi, G. Zhang</i>	
Empirical Analysis in Factors Affecting Spatial Data Sharing	131
<i>H. Chao, T. Chou</i>	

Research on Parallel Computing of Spatial Vector Data Conversion Based on Common Interface	137
<i>X. Jiang, M. Li, T. Huang, S. Zhang, Z. Jin, Z. Chen</i>	
Research on Parallel Algorithm for Polygon Rasterization	143
<i>Y. Wang, M. Li, S. Zhang, L. Tong, J. Wei, Z. Chen</i>	
Database Construction of General Land Use Plan: A Case Study of Changzhou National Hi-Tech District (CND)	147
<i>S. Yan, M. Li, Y. Wang, X. Ma, J. Zhang, F. Li</i>	
Research On Sensitivity Evaluation Of Soil Erosion Based On GIS In Jixi County	153
<i>J. Zhang, M. Li, C. Yang, Y. Wan, F. Li</i>	
A Research on 3D Reconstruction of Building Rooftop Models from LiDAR Data and Orthophoto	158
<i>L. Tong, M. Li, Y. Chen, Y. Wang, W. Zhang, L. Cheng</i>	
Change Detection Of Land Cover In Lushan Based On TM Remote Sensing	163
<i>W. Zhang, Q. Zhang, M. Li, L. Tong, Y. Chen, L. Cheng</i>	
Design and Implementation of Cross-platform GIS Prototype for Geological Applications of RS	168
<i>L. Liu, Y. Tian, H. Yu, L. Wu, Y. Ye, S. An</i>	
A Tile-based Scalable Raster Data Management System Based on HDFS	172
<i>G. Zhang, C. Xie, L. Shi, Y. Du</i>	
3D Modeling and Accuracy Assessment- A Case Study of Photosynth	176
<i>J. Hwang, J. Weng, Y. Tsai</i>	
Zoning Analysis of Ecosystem Services Value in Downtown of Langfang City	182
<i>K. Mao, Q. Huang, M. Liu, W. Chen, M. Li</i>	
New Models and Efficient Algorithms for Hazard Detection	187
<i>W. Ju, C. Fan, S. Liu, J. Liu</i>	
Texture Feature Analysis in Oil Spill Monitoring by SAR Image	194
<i>L. Wei, Z. Hu, M. Guo, M. Jiang, S. Zhang</i>	
A Novel Feature-based and Application-oriented Approach to Marine Sub-bottom Acoustic Spatial Data Fusion	200
<i>X. Jiang, S. Ren, Y. Shi</i>	
Monitoring Deformation of The Intercity Railway Between Beijing and Tianjin With Terrasar	205
<i>L. Du, L. Zhu, M. Chen</i>	
Research on Method of Extracting Vegetation Information based on Band Combination	211
<i>L. Zhao, L. Zhu</i>	
A Cache Framework For Geographical Feature Store	216
<i>H. Yu, Y. Liu, C. Tian, L. Liu, M. Liu, Y. Gao</i>	
An Immersive Visualization System for Virtual 3D City Models	220
<i>J. Engel, S. Pasewaldt, M. Trapp, J. Dollner</i>	
The Impact on the Oriental White Stork Habitat Due to the Agriculture Development in Sanjiang Plain, Northeast China	227
<i>L. Zhang, X. Li, X. Liu</i>	
Automated Plotting Technology Research for the Point Symbols in the Multi-core Environment	231
<i>Z. Zhen</i>	
Development and Application of Three-dimension Simulation Engine in Geological Environment Simulation with A Case Study in Yilin	237
<i>Y. Zhao, S. Huang, L. Wu, Y. Tian</i>	
Implementation of Parallel Algorithm for Rasterization Processing	242
<i>T. Huang, M. Li, X. Jiang, Z. Jin, S. Zhan, Z. Chen</i>	
Ground Deformation Monitoring of Shenzhen Metro Area with Interferometric Point Target Analysis	247
<i>H. Zhou, J. Hu, X. Liu, P. Ren</i>	
Parallelized Remote Sensing Classifier Based on Rough Set Theory Algorithm	252
<i>X. Pan, S. Zhang</i>	
Efficient Interoperation of User-Generated Geospatial Model Based on Cloud Computing	257
<i>L. Duan, B. Hu, X. Zhu</i>	
A Curvature-Based Statistical Method for Generating DTM From LiDAR Point Cloud	265
<i>J. Wan, R. Huang, Z. Zeng, S. Sun</i>	
Decomposition Method of Raster Geographic Data Based on Parallel Computing	269
<i>Z. Jin, Y. Pu, J. Wang, J. Ma, G. Chen</i>	
Assessment of Harm Degree of Crofton Weeds Invasion in Southwest China with NDVI	273
<i>L. Wang, J. Peng, S. Liu, Q. Liu, Y. Li, X. Liang</i>	
NDVI-LST Feature Space Based Drought Monitoring using MERSI Data in Hunan Province of China	278
<i>X. Li, Y. Wang, S. Tang, S. Shen</i>	

Identifying Specific Spatial Tasks through Clustering and Geovisual Analysis	283
<i>A. Tahir, G. McArdle, M. Bertolotto</i>	
Research on Distributed Hilbert R tree Spatial Index Based on BIRCH Clustering	289
<i>Y. Yang, L. Wu, J. Guo, S. Liu</i>	
Risk Analysis of City Emergency Evacuation based on Multi-Agent Simulation	294
<i>Z. Lin, Z. Yan, C. Huang</i>	
An Improved Segmentation of High Spatial Resolution Remote Sensing Image using Marker-based Watershed Algorithm	300
<i>B. Li, M. Pan, Z. Wu</i>	
Parallel Algorithm Designed for Polygon Vectorization	305
<i>J. Wei, M. Li, Y. Wang, C. Chen, W. Hong, Z. Chen</i>	
Natural Disaster Risk Communication - Understandings, Framework, Targets and Challenges	309
<i>D. Xiang, L. Liu, L. Dong, M. Li, D. Tan, Y. Cui</i>	
Predicting the Potential Distribution of Bamboo with Species Distribution Models	316
<i>J. Jin, H. Jiang, J. Xu, W. Peng, L. Zhang, X. Zhang, Y. Wang</i>	
An Intelligent Visualization System for Landslide Monitoring with Sensor Network	320
<i>W. Chen, H. Fan, T. Feng, G. Wu, W. Li, G. Qiao, H. Wu, X. Tong, C. Liu, W. Wang, R. Li</i>	
Study on the Conversion between Farmland and Pastoral Land and its Affecting Factors in the Western of the Songnen Plain	324
<i>M. Liu, M. Li, X. Li, H. Zhang, Q. Zhang, Q. Huang</i>	
Research on the Management and Expression of Disaster Data	329
<i>Y. Ma, F. Duan, H. Liu, J. Tian, G. Duan</i>	
Zero Calibration of Bottom Pressure Gauge in Antarctic: A Case Study at Chinese Zhongshan Station Using GPS Techniques	334
<i>J. Huang, E. Donghchen, S. Zhang</i>	
A MapReduce Approach for Processing Large-scale Remote Sensing Images	338
<i>Y. Liu, L. Chen, W. Xiong, L. Liu, D. Yang</i>	
A Parallel Index Supporting Concurrent Queries For Finding Relevant Remote Sensing Images	345
<i>H. Chen, N. Jing, Y. Chen, L. Chen</i>	
An Internet-based Prototype Platform for Natural Disaster Risk Communication	352
<i>L. Dong, L. Xiong, L. Zeng</i>	
Relationships between Geographical Cluster and Cyberspace Community: A Case Study on Microblog	356
<i>C. Li, Z. Zhao, S. Liu, L. Yin, J. Luo</i>	
Exploring Spatiotemporal Characteristics of Intra-Urban Trips Using Metro Smartcard Records	361
<i>Y. Gong, Y. Liu, J. Yang, Z. Duan, G. Li</i>	
A Research on Human Emergency Evacuation Based on Revised ACO-CA	368
<i>C. Wei, Q. Meng, W. Zheng, Z. Sun, L. Zheng, C. Wang</i>	
The Hydrological Response to Human Activities in Guishuik River Basin, Beijing, China	375
<i>Y. Liu, J. Zhang, P. Wu, H. Gong</i>	
Object-Oriented Segmentation and Classification of wetlands within the Khalong-la-Lithunya a catchment, Lesotho, Africa	378
<i>P. Gao, C. Trettin, S. Ghoshal</i>	
A Method for Optimizing the Volume of Earthwork in the Design of Mountain Building	384
<i>Z. Tong, R. Zhong</i>	
The Comprehensive Evaluation and Spatial Analysis of Jiangsu's Population Quality	388
<i>M. Yang, Z. Jin</i>	
Estimation of Vegetation Water Content Based on MODIS: Application on Forest Fire Risk Assessment	394
<i>M. Jiang, Z. Hu, Y. Ding, D. Fang, Y. Li, L. Wei, M. Guo, S. Zhang</i>	
Determinations of Low Breast Screening Uptake Using Geographically Weighted Regression Model	398
<i>C. Chen, Y. Wang, H. Wan, T. Cheng</i>	
Collaborative Virtual Geographic Environment System for Risk Assessment of Barrier Lakes	404
<i>J. Zhu, Y. Hu, J. Gong, Y. Li</i>	
Study on Natural and Human Impacts on Red-Crowned Crane Habitat in the Yellow River Delta Natural Reserve	409
<i>H. Wang, J. Gao, L. Ren</i>	
A Method of Airborne Remote Sensing Image Quality Assessment Based on Image Matching	414
<i>J. Tian, F. Duan, X. Qu, Y. Yuan, Y. Ma</i>	
Building-Based Urban Land Use Classification from Vector Databases in Manchester, UK	419
<i>M. Hussain, R. Barr, D. Chen</i>	

Data Mining and Visualization Research of Check-in Data	426
<i>M. Wang, L. Qin, Q. Hu</i>	
Towards a Seamless Integration for Spatial Objects and Topography	430
<i>J. Guo, L. Wu, Y. Yang, R. Zhang</i>	
Analysis of the Characteristic and the Driving Force of Island-town Spatial Expansion: A Case Study in Pingtan County	435
<i>W. Hong, M. Li, Y. Wang, N. Lin, J. Wei, F. Li</i>	
Remote Sensing Recognition, Concentration Classification and Dynamic Analysis of Cyanobacteria Bloom in Dianchi Lake Based on MODIS Data	441
<i>M. Pan, K. Yang, X. Zhao, Q. Xu, S. Peng, L. Hong</i>	
Modification of SMB Speckle Filter for Polarimetric TerraSAR-X Data	446
<i>H. Li, J. Chen</i>	
Evaluating Road Selectivity of Urban-Trip based on Dynamic Betweenness Centrality	452
<i>L. Zhou, F. Lu, H. Zhang</i>	
Long-Term Coastal Changes Detection System Based on Remote Sensing and Image Processing Around An Island	457
<i>M. Bouchahma, W. Yan</i>	
Monitoring Land Use/Land Cover Changes of Kunming City Based on Remote Sensing Technology and Spatial Metrics	462
<i>K. Zhang, Y. Zhao, H. Zhang</i>	
Trends in Temperature and Extreme Temperature over the Beijing-Tianjin-Hebei Metropolitan Region During 1957-2009	467
<i>D. Meng, H. Gong, X. Li, D. Zhou</i>	
A Parallelized Multi-objective Particle Swarm Optimization model to design soil sampling network	473
<i>D. Liu, Y. Liu, X. Zhao</i>	
The Development of Jinan Emergency System Based on“3G” Technology	479
<i>S. Dong, Y. Pu, W. Yu, Z. Jin</i>	
Using Collaborative Virtual Geographic Environment for Fire Disaster Simulation and Virtual Fire Training	483
<i>R. Wang, B. Chen, F. Huang, Y. Fang</i>	
A Comparative Study of Several Taylor Expansion Methods on Error Propagation	487
<i>J. Xue, J. Ma</i>	
Research On Log Management System Of Geographical Information Sharing Platform Based On Webgis	492
<i>Q. Zhang, M. Li, W. Zhang, H. Zhang, M. Liu, F. Li</i>	
A Hazard Assessment of Secondary Disasters after Earthquake in Wenchuan	497
<i>W. Yang, Z. Zheng, W. Zhao</i>	
Feature Selection Using Rough Set Theory for Object-Oriented Classification of Remote Sensing Imagery	501
<i>G. Zhang, L. Yi</i>	
Simulation And Visualization Of Forest Fire Growth In An Integrated 3D Virtual Geographical Environment - A Preliminary Study	508
<i>H. Huang, L. Tang, J. Li, C. Chen</i>	
Author Index	