

# **6th Digital Earth Summit 2016**

IOP Conference Series: Earth and Environmental Science  
Volume 46

Beijing, China  
7 – 8 July 2016

## **Editors:**

**Fang Chen**  
**Yuan Zeng**  
**Linlin Guan**

ISBN: 978-1-5108-3271-8  
ISSN: 1755-1307

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2016) by the Institute of Physics  
All rights reserved. The material featured in this book is subject to  
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact the Institute of Physics  
at the address below.

Institute of Physics  
Dirac House, Temple Back  
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481  
Fax: 44 1 17 920 0979

[techtracking@iop.org](mailto:techtracking@iop.org)

**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  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# Table of contents

## Volume 46

**6th Digital Earth Summit**  
**7–8 July 2016, Beijing, China**

**Accepted papers received: 3 November 2016**  
**Published online: 21 November 2016**

### **Preface**

011001  
OPEN ACCESS  
[6th Digital Earth Summit](#)

Fang Chen, Yuan Zeng and Linlin Guan

011002  
OPEN ACCESS  
[Peer review statement](#)

### **Papers**

012001  
OPEN ACCESS  
[Monitor key parameters of winter wheat using Crop model](#)

Yue Jibo, Feng Haikuan and Qi Xiudong.....1

012002  
OPEN ACCESS  
[Fractal Dimension Change Point Model for Hydrothermal Alteration Anomalies in Silk Road Economic Belt, the Beishan Area, Gansu, China](#)

H H Han, Y L Wang, G L Ren, J Q LI, T Gao, M Yang and J L Yang.....7

012003

OPEN ACCESS

[The Application of GeoRSC Based on Domestic Satellite in Field Remote Sensing Anomaly Verification](#)

Ting Gao, Min Yang, Haihui Han, Jianqiang Li and Huan Yi.....13

012004

OPEN ACCESS

[Using ASD data to identify the altered minerals for exploring of gold deposit in the Beishan area, North China](#)

G L Ren, H Yi, M Yang, N Liang, J Q Li and J L Yang.....19

012005

OPEN ACCESS

[An Evaluation of Spatial Distribution of Public Parking Facilities in Huizhou Downtown](#)

Jiasheng Chen, Yang Bai and Ying Chen.....25

012006

OPEN ACCESS

[High resolution remote sensing and potential analysis of iron ore prospecting ——Taking Datong Township, West KunLun Area for example](#)

J Q LI, H YI, G L REN, T GAO, M YANG, H H Han and J L YANG.....33

012007

OPEN ACCESS

[Objected-oriented remote sensing image classification method based on geographic ontology model](#)

Z Chu, Z J Liu and H Y Gu.....39

012008

OPEN ACCESS

[The Extraction of Altered Minerals by use of Hyperspectral and Aster Data and Their Comparison Research in Beketan, Altyn](#)

H Yi, J Q Li, G L Ren, M Yang, H H Han, T Gao and J L Yang.....46

012009

OPEN ACCESS

[An improved SIFT algorithm in the application of close-range Stereo image matching](#)

Xuehua Zhang, Xiaoqing Wang, Xiaoxiang Yuan and Shumin Wang.....51

012010

OPEN ACCESS

[RADI's Airborne X-SAR with High Resolution: Performance, Characterization and Verification](#)

T Shen, J Li, Z R Wang and L Huang.....59

012011

OPEN ACCESS

[An Approach of Web-based Point Cloud Visualization without Plug-in](#)

Mengxuan Ye, Shuangfeng Wei and Dongmei Zhang.....65

012012

OPEN ACCESS

[A hybrid change detection analysis using high-resolution remote sensing image](#)

Q Q Xu, Z J Liu, M Z Yang, H C Ren, C Song and F F Li.....71

012013

OPEN ACCESS

[Airborne LIDAR point cloud tower inclination judgment](#)

Chen liang, Liu zhengjun and Qian jianguo.....77

012014

OPEN ACCESS

[Temporal-spatial distribution of archaeological sites in the Nihewan-Huliu Basin during the Paleolithic-Neolithic and Iron Age in northern China](#)

J X Zhang, X Y Wang, R X Yang, X Z Li and W Zhang.....86

012015

OPEN ACCESS

[EOS situational data shared service mechanism](#)

L Lv, Q Xu, C Z Lan, Q S Shi, W J Lu and W Q Wu.....92

012016

OPEN ACCESS

[A Hierarchical Object-oriented Urban Land Cover Classification Using WorldView-2 Imagery and Airborne LiDAR data](#)

M F Wu, Z C Sun, B Yang and S S Yu.....98

012017

OPEN ACCESS

[Extracting potential bus lines of Customized City Bus Service based on public transport big data](#)

Yibin Ren, Ge Chen, Yong Han and Huangcheng Zheng.....106

012018

OPEN ACCESS

[A classifying method analysis on the number of returns for given pulse of post-earthquake airborne LiDAR data](#)

Jinxia Wang, Aixia Dou, Xiaoqing Wang, Shusong Huang and Xiaoxiang Yuan.....114

012019

OPEN ACCESS

[Non-destructive Analysis Chlorophyll Content of Different Genotypes of Poplars Based on Hyperspectral Reflectance Data](#)

S Jin, Y Dian, R Wang, L Peng, X Liu, Z Zhou, S Zhong and Y Wang.....120

012020

OPEN ACCESS

[An Effective Algorithm Research of Scenario Voxelization Organization and Occlusion Culling](#)

Guangling Lai, Lu Ding, Zhiyuan Qin and Xiaochong Tong.....126

012021

OPEN ACCESS

[A Global "Natural" Grid Model Based on the Morse Complex](#)

Hongbin Wang, Xuesheng Zhao, Xinying Zhu and Jiebiao Li.....132

012022

OPEN ACCESS

[The Discrete Fourier Transform on hexagonal remote sensing image](#)

Yalu Li, Jin Ben, Rui Wang and Lingyu Du.....142

012023

OPEN ACCESS

[A Integrated Service Platform for Remote Sensing Image 3D Interpretation and Draughting based on HTML5](#)

Yiping LIU, Qing XU, Heng ZhANG, Liang LV, Wanjie LU and Dandi WANG.....148

012024

OPEN ACCESS

[The Coverage Analysis for Moon-based Platform at Three- Polar Regions on Earth](#)

Hanlin YE, Huadong GUO and Guang LIU.....154

012025

OPEN ACCESS

[Text Content Pushing Technology Research Based on Location and Topic](#)

Dongqi Wei, Jianxin Wei, Naheman Wumuti and Baode Jiang.....161

012026

OPEN ACCESS

[Multi-Scale Visualization Analysis of Bus Flow Average Travel Speed in Qingdao](#)

HAN Yong, GAO Man, ZHANG Xiao-Lei, LI Jie and CHEN Ge.....167

012027

OPEN ACCESS

[Estimation of carbon storage and carbon density of forest vegetation in Ili River Valley, Xinjiang](#)

Guo jing, Zhang renping, Wang ranghui, Yusupujiang aimaiti, Asiyemu tuerdi and Zhang dongya.....173

012028

OPEN ACCESS

[Comparing interpolation techniques for annual temperature mapping across Xinjiang region](#)

Zhang Ren-ping, Guo Jing, Liang Tian-gang, Feng Qi-sheng and Yusupujiang Aimaiti.....180

012029

OPEN ACCESS

[An improved hybrid data-driven model and its application in daily rainfall-runoff simulation](#)

Guangyuan Kan, Xiaoyan He, Liuqian Ding, Jiren Li, Tianjie Lei, Ke Liang and Yang Hong.....186

012030

OPEN ACCESS

[Study on analysis from sources of error for Airborne LIDAR](#)

H C Ren, Q Yan, Z J Liu, Z Q Zuo, Q Q Xu, F F Li and C Song.....194

012031

OPEN ACCESS

[Comparing NetCDF and SciDB on managing and querying 5D hydrologic dataset](#)

Haicheng Liu and Xiao Xiao.....200

012032

OPEN ACCESS

[Remote sensing-based analysis on temporal and spatial changes about environmental elements in the northwest of Junggar basin, China](#)

Liu Yang, Zhang Nannan, Dong Wentong, Zou Liqun and Huang Shanghong.....207



012033

OPEN ACCESS

[Wave height possibility distribution characteristics of significant wave height in China Sea based on multi-satellite grid data](#)

W Han and J Yang.....211

012034

OPEN ACCESS

[Growth pattern research on the modern deposition of Ganjiang delta in Poyang lake basin by spatio-temporal remote sensing images](#)

Hongying Zhou, Xuanjun Yuan, Youyan Zhang, Wentong Dong and Song Liu.....216

012035

OPEN ACCESS

[Coastline detection in SAR images using discriminant cuts segmentation](#)

Xianwen Ding, Xiaolin Zou and Tan Yu.....224

012036

OPEN ACCESS

[Database assessment of CMIP5 and hydrological models to determine flood risk areas](#)

Ponthip Limlahapun and Hiromichi Fukui.....229

012037

OPEN ACCESS

[Design and realization of RS application system for earthquake emergency based on digital earth](#)

Xiaoxiang Yuan, Xiaoqing Wang, Jianxing Guo, Aixia Dou and Xiang Ding.....235

012038

OPEN ACCESS

[Open Standards in Practice: An OGC China Forum Initiative](#)

Peng Yue, Mingda Zhang, Trevor Taylor, Jibo Xie, Hongping Zhang, Xiaochong Tong, Jinsongdi Yu and Juntao Huang.....241

012039

OPEN ACCESS

[Big Data Cognition for City Emergency Rescue](#)

Xin Zhang, Yongxin Chen and Weisheng Wang.....248

012040

OPEN ACCESS

[Three-dimensional Modelling Technology for City Indoor Positioning and Navigation Applications](#)

Xin Zhang, Yongxin Chen and Weisheng Wang.....253

012041

OPEN ACCESS

[Extraction of cross-sea bridges from GF-2 PMS satellite images using mathematical morphology](#)

Chao Chen, Xinxin Sui, Guangwei Zhen, Biyun Guo and Xiaowei Chen.....259

012042

OPEN ACCESS

[Responses of water resource of the Yarlung Zangbo River Basin to climate changes and glacier-snow fluctuations in recent years](#)

N Nie, W C Zhang and C Deng.....267

012043

OPEN ACCESS

[Spatial-temporal variations and their dynamics of the saline lakes in the Qaidam Basin over the past 40 years](#)

S L Zhou, W C Zhang and F Wang.....273

012044

OPEN ACCESS

[Research on algae blooms forecasting based on the multivariate data driven method: a case study of the Chaohu Lake](#)

Xiang bo, Zhao Yanchuang, Wang Xinyuan and Zong Xin.....280

012045

OPEN ACCESS

[Precipitation Interpolation by Multivariate Bayesian Maximum Entropy Based on Meteorological Data in Yun- Gui-Guang region, Mainland China](#)

Chaolin Wang, Shaobo Zhong, Fushen Zhang and Quanyi Huang.....286

012046

OPEN ACCESS

[Experiences of using UAVs for monitoring levee breaches](#)

J Brauneck, R Pohl and R Juepner.....293

012047

OPEN ACCESS

[Radix Representation of Triangular Discrete Grid System](#)

J Ben, Y L Li and R Wang.....299

012048

OPEN ACCESS

[WebGIS based community services architecture by griddization managements and crowdsourcing services](#)

Haiyin Wang, Jianhua Wan, Zhe Zeng and Shengchuan Zhou.....305

012049

OPEN ACCESS

[Moon-based visibility analysis for the observation of "The Belt and Road"](#)

Yuanzhen REN, Huadong GUO, Guang LIU, Hanlin YE, Yixing DING, Zhixing RUAN and Mingyang LV.....311

012050

OPEN ACCESS

[The architecture for data, security and application in Digital Earth platform](#)

Fang Miao, Wenhui Yang, Ansheng Ye and Huayue Chen.....317

012051

OPEN ACCESS

[Land use scenarios simulation based on the CLUE-S model of the Lijiang River Basin in Guilin, China](#)

Qingwen Jin, Guang Liu, Lei Li, Chengxin He, Yuqing Huang and Yuefeng Yao.....330

012052

OPEN ACCESS

[A Groud and Aerial BattleField Spatio-Temporal Data Unified OrganizeModel and Aplication](#)

LI Feng, Li Qin, WAN Gang and CAO Xuefeng.....336

012053

OPEN ACCESS

[BEMD-based high resolution image fusion for land cover classification: A case study in Guilin](#)

Lei Li, Guang Liu, Qingwen Jin, Chengxin He, Yuqing Huang and Yuefeng Yao.....342

012054

OPEN ACCESS

[Research on Geo-information Data Model for Preselected Areas of Geological Disposal of High-level Radioactive Waste](#)

M Gao, S T Huang, P Wang, Y A Zhao and H B Wang.....348

012055

OPEN ACCESS

[Beyond Moore's Law: Harnessing spatial-digital disruptive technologies for Digital Earth](#)

Timothy W. Foresman.....355

012056

OPEN ACCESS

[Digital disaster evaluation and its application to 2015  \$M\_s\$  8.1 Nepal Earthquake](#)

Xiaoqing WANG, Jinxia LV, Xiang DING and Aixia DOU.....360

012057

OPEN ACCESS

[Mobile 3D laser scanning technology application in the surveying of urban underground rail transit](#)

Youmei Han, Bogang Yang and Yinan Zhen.....366

012058

OPEN ACCESS

[Considerations on Geospatial Big Data](#)

Zhen LIU, Huadong GUO and Changlin WANG.....376

012059

OPEN ACCESS

[Wave height possibility distribution characteristics of significant wave height in China Sea based on multi-satellite grid data](#)

W Han and J Yang.....388

012060

OPEN ACCESS

[A classification algorithm based on Cloude decomposition model for fully polarimetric SAR image](#)

Hongmao Xiang, Shanwei Liu, Ziqi Zhuang and Naixin Zhang.....393

012061

OPEN ACCESS

[Comprehensive evaluation and analysis of ecological environment quality of Laoshan Natural Reserve based on Remote Sensing](#)

Wenlian Cui, Shanwei Liu, Yan Liu, Yanling Wang and Naixin Zhang.....401

012062

OPEN ACCESS

[Calculating the Marine Gravity Anomaly of the South China Sea based on the Inverse Stokes Formula](#)

Liang Liu, Xiaoguang Jiang, Shanwei Liu, Lei Zheng, Jinxia Zang, Xuehua Zhang and Longfei Liu.....407