

# **International Symposium on Earth Observation for One Belt and One Road 2016 (EOBAR)**

IOP Conference Series: Earth and Environmental Science  
Volume 57

Beijing, China  
16 – 17 May 2016

## **Editors:**

**Xinqu Li**  
**Jie Liu**  
**Zhongchang Sun**

ISBN: 978-1-5108-3743-0  
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 57

**International Symposium on Earth Observation for One Belt and One Road (EOBAR)**

**16–17 May 2016, Beijing, China**

**Published online: 7 March 2017**

### **Preface**

011001

OPEN ACCESS

[International Symposium on Earth Observation for One Belt and One Road \(EOBAR\)](#)

011002

OPEN ACCESS

[Peer review statement](#)

### **Agriculture and Water**

012001

OPEN ACCESS

[The information extraction of Gannan citrus orchard based on the GF-1 remote sensing image](#)

S Wang and Y L Chen.....1

012002

OPEN ACCESS

[Testing efficacy of monthly forecast application in agrometeorology: Winter wheat phenology dynamic](#)

B Lalic, D Jankovic, Lj Dekic, J Eitzinger and A Firanj Sremac.....10

## **GEOSS Data Capacity Building along Belt and Road (DCB)**

012003

OPEN ACCESS

[A phenology-based classification for crop in Great Mekong Subregion based on MODIS data](#)

Tingting LV, Zui TAO, Xiang ZHOU, Xiaoyu SUN, Aqiang YANG and Banghui YANG.....18

012004

OPEN ACCESS

[Glacier parameter extraction using Landsat 8 images in the eastern Karakorum](#)

H Wang, R Yang, X LI and S CAO.....24

012005

OPEN ACCESS

[Analysis of dynamic change of Hongjiannao Lake based on MNDWI](#)

Hui Yue, Ying Liu, Haoren Wang and Wei Zhang.....32

## **Climate Change**

012006

OPEN ACCESS

[Ice flood velocity calculating approach based on single view metrology](#)

X Wu and L Xu.....36

012007

OPEN ACCESS

[Long-term change of protective forest during the past four decades at Dongshan Island, southeastern China](#)

Caiyun Zhang, Jing Yan and Shaoling Shang.....43

012008

OPEN ACCESS

[Environmental suitability evaluation for human settlements in Bosten Lake Basin](#)

A Maimaiti, L M Wang, J Zhang and Z L Song.....51

012009

OPEN ACCESS

[Comparative analysis of NPP changes in global tropical forests from 2001 to 2013](#)

S Yin, X Li and W Wu.....56

012010

OPEN ACCESS

[Simulation of actual terrain ocean tide in the bays with SPH](#)

Wang Tao.....65

012011

OPEN ACCESS

[Exploring multi-scale forest above ground biomass estimation with optical remote sensing imageries](#)

U Koju, J Zhang and H Gilani.....70

## **Disaster**

012012

OPEN ACCESS

[Dynamic drought risk assessment using crop model and remote sensing techniques](#)

H Sun, Z Su, J Lv, L Li and Y Wang.....78

012013

OPEN ACCESS

[Infrastructure stability surveillance with high resolution InSAR](#)

Timo Balz and Ralf Düring.....86

012014

OPEN ACCESS

[Mapping mountain torrent hazards in the Hexi Corridor using an evidential reasoning approach](#)

Youhua Ran, Jinpeng Liu, Feng Tian and Dekai Wang.....95

012015

OPEN ACCESS

[Volunteered Geographic Information for Disaster Management with Application to Earthquake Disaster Databank & Sharing Platform](#)

H Chen, W C Zhang, C Deng, N Nie and L Yi.....103

012016

OPEN ACCESS

[Flood monitoring and damage assessment in Thailand using multi-temporal HJ-1A/1B and MODIS images](#)

S L Zhou and W C Zhang.....112

012017

OPEN ACCESS

[Landslide Identification and Information Extraction Based on Optical and Multispectral UAV Remote Sensing Imagery](#)

Jiayuan Lin, Meimei Wang, Jia Yang and Qingxia Yang.....120

012018

OPEN ACCESS

[Building damage assessment using a single post-earthquake PolSAR image: a case of the 2010 Yushu earthquake](#)

Wei Zhai and Wenhao Zeng.....127

012019

OPEN ACCESS

[Sentinel-1 TOPS interferometry for along-track displacement measurement](#)

H J Jiang, Y Y Pei and J Li.....135

## **Energy and Mineral Resources**

012020

OPEN ACCESS

[Field Hyperspectral Remote Sensing of Target Region in Xiemisitai Mountain, Xinjiang Province, China](#)

Q J Wang, Y M Wei, Y Chen, X L Ma and H Y Zhou.....142

012021

OPEN ACCESS

[NPP-VIIRS DNB-based reallocating subpopulations to mercury in Urumqi city cluster, central Asia](#)

X Zhou, X B Feng, W Dai, P Li, C Y Ju, Z D Bao and Y L Han.....149

012022

OPEN ACCESS

[Building the 3D Geological Model of Wall Rock of Salt Caverns Based on Integration Method of Multi-source data](#)

WANG Yongzhi, WANG hui, LIAO Lixia and LI Dongsen.....156

012023

OPEN ACCESS

[Estimation of the surface displacement of ore mining quarry using Satellite Radar Interferometry](#)

Maira G. Razakova.....164

012024

OPEN ACCESS

[Landslide susceptibility mapping based on GIS modle on Shicheng Jiangxi province, china](#)

Wufu Qi, Yu Chen, Xianfeng Cheng, Qinjun Wang and Yongmin Wei.....169

012025

OPEN ACCESS

[Comparison of SMMI, PDI and its applications in Shendong mining area](#)

Ying Liu, Hui Yue, Haoren Wang and Wei Zhang.....176

012026

OPEN ACCESS

[Emergency Broadcast System Based On GIS](#)

Kang Junfeng, Wang Baoyu, Jiang Xueying and Liu Xiaosheng.....182

## **Space Technologies for World Heritage Sites**

012027

OPEN ACCESS

[Digital reconstruction of the Song Dynasty Ganzhou drainage system based on AR technology and its' application in the new urban area planning and revision](#)

H L. Cao, Y L. Chen and T H. Tao.....188

012028

OPEN ACCESS

[Historical ruins of remote sensing archaeology in arid desertified environment, northwestern China](#)

N. K. Hu and X. Li.....195

012029

OPEN ACCESS

[Regional specific features and temporal evolution of the quasi-biennial oscillation of total ozone \(TO\) in the atmosphere](#)

M D Orozaliev and A S Abdyldaev.....201

012030

OPEN ACCESS

[Detect, map, and preserve Bronze & Iron Age monuments along the pre-historic Silk Road](#)

Timo Balz, Gino Caspari and Bihong Fu.....211



012031

OPEN ACCESS

[Radar remote sensing for archaeology in Hangu Frontier Pass in Xin'an, China](#)

A H Jiang, F L Chen, P P Tang, G L Liu, W K Liu, H C Wang, X Lu and X L Zhao.....218

012032

OPEN ACCESS

[Spatial information management platform for Dunhuang Global Geopark](#)

YU Yan-long, WU Fa-dong, HAN Jin-fang, WANG Yan-Jie and CHU Hao.....226

012033

OPEN ACCESS

[Long term spatio-temporal analyses of snow cover in Central Asia using ERA-Interim and MODIS products](#)

J P Liu and W C Zhang.....234

012034

OPEN ACCESS

[Plant conservation priorities of Xinjiang region, China](#)

L P Li, W H Cui, T Wang, S Tian, W J Xing, L K Yin, N Abdusalih and Y M Jiang.....242

## **Urban Growth and Environment**

012035

OPEN ACCESS

[Synergistic Use of WorldView-2 Imagery and Airborne LiDAR Data for Urban Land Cover Classification](#)

M F Wu, Z C Sun, B Yang and S S Yu.....253

012036

OPEN ACCESS

[Extracting built-up areas from TerraSAR-X data using object-oriented classification method](#)

SuYun Wang and Z C Sun.....259

012037

OPEN ACCESS

[Suitability evaluation of urban terrain in China](#)

Shunguang Hu, Z X Zhang, X L Zhao, X Wang, B Liu, L Yi, Q K Wen, L J Zuo, F Liu and J Y Xu.....267

012038

OPEN ACCESS

[Analysis of spatial pattern Change of LU/LC over the upper Tarim River region since 1990 using remote sensing data](#)

L Y Bai, J Z Feng, Y X Ma, Q Y Ran, K Wang and Y Zhao.....276

## **Space Observation of the Maritime Silk Road**

012039

OPEN ACCESS

[Early Stage Evolution of Nourished Beach under High-energy, Macro-tidal Environment](#)

J H Liu, F Cai, Z W Zhang and B Li.....284

012040

OPEN ACCESS

[Storm surge observed by Chinese HY-2A satellite radar altimetry](#)

J Yang, X Li, G Han, N Chen and D Chen.....293

012041

OPEN ACCESS

[Two-dimensional Phase Unwrapping Method Using Cost Function of  \$L^0\$  Norm](#)

J GAO, L LI and L SHI.....298

012042

OPEN ACCESS

[Extraction and Analysis of Mega Cities' Impervious Surface on Pixel-based and Object-oriented Support Vector Machine Classification Technology: A case of Bombay](#)

S S Yu, Z C Sun, L Sun and M F Wu.....307

## **Spatial Data Processing, Applications and Services**

012043

OPEN ACCESS

[Study on Mobile Object Positioning and Alarming System Based on the "Map World" in the Core Area of the Silk Road Economic Belt](#)

Kai Mu.....315

012044

OPEN ACCESS

[Improved algorithm for hyperspectral data dimension determination](#)

Jie CHEN, Lei DU, Jing LI, Yachao HAN and Zihong GAO.....324

## **Earth Observation for Urban Growth and Environment**

012045

OPEN ACCESS

[Spatiotemporal changes of built-up land and population distribution patterns in China during 1990-2010](#)

Y H Ren, Y L Liu and L J Yu.....332

## **Space Atmosphere-Land Surface Interaction**

012046

OPEN ACCESS

[Effect of different forage species on the nitrogen uptake in Hulunbeir](#)

Li-Jun Xu, Xing-Liang Xu, Xue-Juan Tang, Gui-Xia Yang, Zhao Zhang and Xiao-Ping Xin.....340

012047

OPEN ACCESS

[The Cluster of City Buildings Based on the SOM Neural Network](#)

Z. Wang and Q. Liu.....348

## **Spatial Data Processing**

012048

OPEN ACCESS

[Cloud removing method for daily snow mapping over Central Asia and Xinjiang, China](#)

Xiaoqi Yu, Yubao Qiu, Huadong Guo and Lijuan Chen.....354

012049

OPEN ACCESS

[Precipitation Retrievals in typhoon domain combining of FY3C MWHTS Observations and WRF Predicted Models](#)

HE Jieying, ZHANG Shengwei and LI Na.....360

012050

OPEN ACCESS

[Assessment of Water Use in Pan-Eurasian and African Continents by ETMonitor with Multi-Source Satellite Data](#)

Chaolei Zheng, Li Jia, Guangcheng Hu, Massimo Menenti, Jing Lu, Jie Zhou, Kun Wang and Zhansheng Li.....367

012051

OPEN ACCESS

[Improved Algorithm of SCS-CN Model Parameters in Typical Inland River Basin in Central Asia](#)

Jin J Wang, Jian L Ding, Zhe Zhang and Wen Q Chen.....375

## **Digital Earth for OBOR**

012052

OPEN ACCESS

[Analysis of Spatial Pattern of Urban System along the Overland Silk Road Economic Belt Using DMSP-OLS Nighttime Light Data](#)

Jianzhong Feng, Linyan Bai, Kui wang, Xuefu Zhang, Nengfu Xie, Qiyun Ran, Mingqiu Guo and Lijun Xu.....384

012053

OPEN ACCESS

[Investigating the origin of the Chinese name for alfalfa](#)

Q Z Sun, L J Xu, X J Tang, J T Ma, D Wang, D Li, Q Liu, Y Tao and F Li.....395

012054

OPEN ACCESS

[The Crucial Records Number to Retrieve Offshore Directional Wind Distribution](#)

X Zhu, Z Li and X Yang.....402

012055

OPEN ACCESS

[Temporal and Spatial Variation Characteristics of Natural Woodland in the Upper Reaches of the Tarim River in Recent 25 Years](#)

Q Y Ran, L Y Bai, J Z Feng, Y Zhao, M Q Guo and K Wang.....410

012056

OPEN ACCESS

[Urban Change Detection of Pingtan City based on Bi-temporal Remote Sensing Images](#)

JIANG Degang, XU Jinyan and GAO Yikang.....420

012057

OPEN ACCESS

[Urbanization Process Monitoring in Northwest China based on DMSP/OLS Nighttime Light Data](#)

K Wang, L Y Bai and J Z Feng.....426

012058

OPEN ACCESS

[Surface Disturbance Analysis in Rare Earth Mining](#)

H K. Li, L. Yang and Z W. Liu.....436