PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 9669

, "Front Matter: Volume 9669," Proc. SPIE 9669, Remote Sensing of the Environment: 19th National Symposium on Remote Sensing of China, 966901 (6 August 2015); doi: 10.1117/12.2208201

SPIE.

Event: Remote Sensing of the Environment: 19th National Symposium on Remote Sensing of China, 2014, Xian City, China

PROCEEDINGS OF SPIE

Remote Sensing of the Environment: 19th National Symposium on Remote Sensing of China

**Qingxi Tong
Boqin Zhu**
Editors

**20–23 September 2014
Xian, China**

Organized by
Chinese National Committee for Remote Sensing
Chinese Society of Astronautics

Hosted by
Beijing Institute of Space Mechanics and Electricity
Committee on Space Remote Sensing, Chinese Society of Astronautics
Committee on Optics and Remote Sensing, China Association of Remote Sensing
Applications
Professional Group of Remote Sensing Payload, China Academy of Space Technology
Committee for Space Optics, The Chinese Optical Society

Published by
SPIE

Volume 9669

Proceedings of SPIE 0277-786X, V. 9669

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Remote Sensing of the Environment: 19th National Symposium on Remote Sensing of China,
edited by Qingxi Tong, Boqin Zhu, Proc. of SPIE Vol. 9669, 966901 · © 2015 SPIE
CCC code: 0277-786X/15/\$18 · doi: 10.1117/12.2208201

Proc. of SPIE Vol. 9669 966901-1

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Remote Sensing of the Environment: 19th National Symposium on Remote Sensing of China*, edited by Qingxi Tong, Boqin Zhu, Proceedings of SPIE Vol. 9669 (SPIE, Bellingham, WA, 2015) Article CID Number.

ISSN: 0277-786X

ISBN: 9781628418910

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

SPIE.org

Copyright © 2015, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/15/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIDigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print. Papers are published as they are submitted and meet publication criteria. A unique citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc.

The CID Number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages.

Contents

v	<i>Authors</i>
vii	<i>Conference Committee</i>
ix	<i>Conference Sponsors</i>

REMOTE SENSING TECHNOLOGY AND MODELING

9669 02	Study on light weight design of truss structures of spacecrafts [9669-9]
9669 03	An integrated compact airborne multispectral imaging system using embedded computer [9669-14]
9669 04	Studies on delay-Doppler mapping of GNSS-R signals [9669-4]
9669 05	Geometric simulation analysis of multi-band mosaic imaging from the same orbit by agile satellites [9669-15]
9669 06	On-orbit geometric calibration and validation of Optical-1 HR [9669-2]
9669 07	Monitoring soil moisture through assimilation of active microwave remote sensing observation into a hydrologic model [9669-32]
9669 08	Speed-up matching method with navigation data for UAV remote sensing images of coastal region [9669-34]
9669 09	The simulation of infrared point target detection based on bidirectional oversampling [9669-37]
9669 0A	Image and spectral fidelity study of hyperspectral remote sensing image scaling up based on wavelet transform [9669-21]
9669 0B	Study of data preprocess for HJ-1A satellite HSI image [9669-24]
9669 0C	A rapid extraction of landslide disaster information research based on GF-1 image [9669-10]
9669 0D	Impacts of different transformation models on remote sensing image registration accuracy based on implicit similarity [9669-11]
9669 0E	Effectiveness analysis of ACOS-Xco₂ bias correction method with GEOS-Chem model results [9669-18]
9669 0F	Research on geometric rectification of the Large FOV linear array whiskbroom image [9669-23]

- 9669 OG **Detection of fault structures with airborne LiDAR point-cloud data** [9669-26]
- 9669 OH **Comparison of three empirical methods for water depth mapping with case study of Pratas Island** [9669-30]
- 9669 OI **Research on optimal path planning algorithm of task-oriented optical remote sensing satellites** [9669-7]

REMOTE SENSING APPLICATIONS

- 9669 OJ **The cross time and space features in remote sensing applications** [9669-8]
- 9669 OK **Framework design for remote sensing monitoring and data service system of regional river basins** [9669-22]
- 9669 OL **3D coseismic deformation inversion of Wenchuan Ms8.0 earthquake with D-InSAR and the fault movement model** [9669-35]
- 9669 OM **Remote sensing monitoring of the 2012 Beijing extreme rainstorm event** [9669-1]
- 9669 ON **Calibration and application of TRMM precipitation data in Irrawaddy River Basin** [9669-12]
- 9669 OO **The application of the unmanned aerial vehicle remote sensing technology in the FAST project construction** [9669-28]
- 9669 OP **Maize recognition and accuracy evaluation with GF-1 WFV sensor data** [9669-3]
- 9669 OQ **Improvement of remotely sensed vegetation coverage in heterogeneous environments with an optimal zoning approach** [9669-33]
- 9669 OR **A study on monitoring land use/cover change of mining area based on ticket-voting SVM classification** [9669-16]
- 9669 OS **Wetland change in Wangning during 2002 and 2013** [9669-29]
- 9669 OT **Temporal and spatial analysis of global GOSAT XCO₂ variations characteristics** [9669-20]

Authors

Numbers in the index correspond to the last two digits of the six-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first four digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Ai, Cuifang, 0D	Ma, Yi, 0A
An, Ni, 0A	Pang, Zhiguo, 0J, 0K, 0N
Bao, Yuhai, 0A	Peng, Ling, 0C
Bie, Nian, 0E	Qin, Xiuchun, 0T
Chen, Ailian, 0H	Qin, Xuwen, 06
Chen, Jie, 0G	Qu, Wei, 0J, 0M, 0N
Chen, Jinwei, 05	Shen, C. Y., 0L
Chen, Y. L., 0L	Shen, Mingge, 0R
Chen, Yueting, 05	Song, Wenlong, 0J, 0M, 0N
Cheng, Y. Z., 0P	Sun, Booming, 0T
Da, Xuanfu, 09	Tan, H. B., 0L
Di, Yanan, 08	Tan, Y. N., 0N
Dong, Di, 04	Tong, Xiaowei, 0S
Dong, Hao, 0F	Wang, Feng, 0B
Du, Lei, 0G	Wang, Jian, 02
Feng, Huajun, 05	Wang, Kelin, 0S
Fu, Jun'e, 0J, 0K	Wang, L. G., 0P
Gan, Huayang, 0S	Wang, Li, 03
Gao, Hailiang, 0B	Wang, Na, 0C
Gu, Xing-fa, 0B	Wang, Qian, 0E, 0T
Gui, Popo, 0D	Wang, Sai, 0C
Guo, L. Y., 0L	Wang, X. Y., 0L
Guo, Lijie, 0E	Wang, Zhiyi, 0C
Guo, Y., 0P	Wu, J. C., 0L
He, Hua-ying, 0B	Wu, X. H., 0P
Huang, Ping, 0M	Xia, Zhen, 0S
Huang, Wenchao, 06	Xu, Shengli, 0I
Jiang, Gangwu, 08	Xu, Suning, 0C
Jiang, Yonghua, 06	Xu, Yue, 05
Jing, Cheng, 04	Xu, Zhihai, 05
Lai, Linfang, 09	Yang, Jianzhong, 02
Lei, Liping, 0E, 0T	Yang, Xiaofeng, 04
Li, Delong, 0M	Yao, Yahui, 0D
Li, Qi, 05	Ye, Qin, 0D
Li, Ru, 0Q, 0S	Ying, Min, 0R
Li, S. M., 0P	Yu, Jie, 0R
Li, Ziwei, 04	Yu, Tao, 0B
Lin, Yi, 0R	Yu, Yang, 04
Liu, Da, 0E, 0T	Yuan, Jingpeng, 0I
Liu, Dia, 0F	Yue, Yuemin, 0Q, 0S
Liu, Fengjing, 0I	Zeng, Fuming, 02
Liu, Hui-tong, 0F	Zhang, Guo, 06
Liu, Min, 0E, 0T	Zhang, T. T., 0N
Liu, Qian, 07	Zhang, Xuguo, 03
Liu, T., 0P	Zhang, Yi, 08
Liu, Xiao-bo, 0F	Zhang, Yuedong, 03
Liu, Yunhe, 0I	Zhao, Yingshi, 07
Lu, Jingxuan, 0J, 0K, 0M, 0N	Zheng, G. Q., 0P
Ma, Wentao, 04	Zhou, Feng, 09

Zhu, Boqin, 0H, 0O, 0S
Zhu, Ling-ya, 0B

Conference Committee

Honorary President

Qinmin Wang, Xiji Wang, Guanhua Xu

President

Qingxi Tong

Executive President

Tao Yue

Presidium

Qifeng Yu, Zheng You, Renxiang Wang, Jiayao Wang, Peijian Ye, Yirong Wu, Guangjun Zhang, Jun Zhang, Lvqian Zhang, Xiaowen Li, Deren Li, Liwei Zhou, Chenghu Zhou, Guofan Jin, Jingshan Jiang, Huadong Guo, Huixing Gong, Junhao Chu, Delu Pan, Yongqi Xue, Junhua Yang, Tao Yue, Xingfa Gu, Wei Gao, Xiaohan Liao

General Secretary

Zhaojun Liu, Boqin Zhu

Secretariat

Wenpo Ma, Hongbin Fang, Xiaoyong Wang, Guanhua Wang, Jinnian Wang, Qiao Wang, Zhou Shi, Jie Bai, Fuhu Ren, Zhaojun Liu, Boqin Zhu, Zhanguo He, Qingjun Zhang, Bing Zhang, Dengrong Zhang, Jiahong Li, Ming Li, Wei Li, Yanhua Li, Zengyuan Li, Jun Yang, Kaichang Di, Zhansheng Chen, Jie Shan, Jie Zhou, Mingsen Lin, Yida Fan, Xin Hu, Xiaomin Zhao, Zhongming Zhao, Jicheng Zhao, Xinmin Tang, Peng Xu, Qiming Qin, Puming Huang, Xingwei Jiang, Jingxuan Lu

Conference Sponsors

Organized by

Chinese National Committee for Remote Sensing
Chinese Society of Astronautics

Hosted by

Beijing Institute of Space Mechanics and Electricity
Committee on Space Remote Sensing, Chinese Society of Astronautics
Committee on Optics and Remote Sensing, China Association of Remote Sensing Applications
Professional Group of Remote Sensing Payload, China Academy of Space Technology
Committee for Space Optics, The Chinese Optical Society

International Sponsors

SPIE • International Society for Digital Earth (ISDE) • Asian Association on Remote Sensing (AARS)

Sponsored by

The Association on Environment Remote Sensing of China
Committee of Remote Sensing for Geology, The Geological Society of China
Committee on Photogrammetry and Remote Sensing, Chinese Society for Geodesy Photogrammetry and Cartography (CPRS, CSGPC)
Committee on Ocean Remote Sensing, Chinese Society for Oceanology and Limnology, Chinese Society of Oceanography
Committee on Satellite Meteorology and Space Weather, China Meteorological Society
Committee on Space Remote Sensing, Chinese Society of Space Research
Committee on Electronics, Chinese Society of Aeronautics and Astronautics
Committee on Telemetry, Remote Sensing and Control, Chinese Association of Automation
Committee on Software Industry, China Association for Geographic Information Systems
Committee on Remote Sensing, Chinese Hydraulic Engineering Society
Committee on Remote Sensing, Chinese Society for Imaging Science and Technology
Affiliated Society of Land Information and Remote Sensing, China Land Science Society
United Remote Sensing Application Research Center of Chinese Universities
Chinese National Committee, International Society for Digital Earth
Committee of Environmental Information System and Remote Sensing, Chinese Society for Environmental Sciences
Committee on Remote Sensing of Soil Information, Soil Science Society of China