PROCEEDINGS OF SPIE

International Conference on Remote Sensing Technology and Survey Mapping (RSTSM 2024)

Hormoz Sohrabi
Tarun Kumar Lohani
Editors

12–14 January 2024
Changchun, China

Organized by
Changchun College of Electronic Technology (China)
Gandhi Institute for Education and Technology (India)

Sponsored by
AEIC—Academic Exchange Information Centre (China)

Published by
SPIE

Volume 13166

Proceedings of SPIE 0277-786X, V. 13166

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

The papers 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. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers 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 these proceedings:
Author(s), "Title of Paper," in *International Conference on Remote Sensing Technology and Survey Mapping (RSTSM 2024)*, edited by Hormoz Sohrabi, Tarun Kumar Lohani, Proc. of SPIE 13166, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X
ISSN: 1996-756X (electronic)

ISBN: 9781510679993
ISBN: 9781510680005 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)
SPIE.org
Copyright © 2024 Society of Photo-Optical Instrumentation Engineers (SPIE).

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 fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center 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.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

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

SPIE. DIGITAL LIBRARY
SPIEDigitalLibrary.org

Paper Numbering: A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE at the time of 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 and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five 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.

Contents

v *Conference Committee*

REMOTE SENSING TECHNOLOGY APPLICATION AND DATA PROCESSING

13166 02 **Research on monitoring and early warning methods for extreme thunderstorm and strong wind events in Liaoning Province using the FY-4A satellite** [13166-8]

13166 03 **SplitNet: enhancing edge information for remote sensing image segmentation** [13166-15]

13166 04 **Employing geostationary satellite to examine the physical properties of cloud tops for thunderstorm gusts** [13166-19]

13166 06 **Noise reduction analysis of deformation data based on MEEMD-SVD modeling** [13166-12]

13166 07 **Estimation of vegetation coverage based on dimidiate pixel model using remote sensing data in Songhua Lake basin, Jilin Province** [13166-25]

13166 08 **Street-to-satellite view synthesis for cross-view geo-localization** [13166-6]

13166 09 **Identification of geological hazards in Yishui County Shandong Province using GF-2 remote sensing images** [13166-10]

13166 0A **Fast remote sensing image geometric-correction method based on GPU parallel processing** [13166-31]

13166 0B **Geographic information spatial feature extraction based on drone aerial surveying and mapping technology** [13166-35]

13166 0C **Accurate identification of soil moisture in Mu Us Sandy Land based on multi-source remote sensing data** [13166-1]

13166 0D **Study on object-oriented urban land use extraction based on Landsat image** [13166-13]

13166 0E **Microelement exploration in lunar south polar region** [13166-33]

13166 0F **Fault structure mapping using satellite-based remote sensing technology in Mindoro** [13166-30]

13166 0G **Temporal and spatial evolution research of Dongting Lake based on Landsat-8 remote sensing images** [13166-4]

13166 0H **Identification of lithology-structures and quartz veins in the Heijinshan area of Dunhuang City, Gansu Province based on GF-2 satellite image** [13166-17]

13166 0I **Simulation research on the reflection characteristics of typical microsurfaces for remote sensing targets** [13166-32]

INTELLIGENT DETECTION AND SPATIO-TEMPORAL CHARACTERIZATION

13166 0J **Research on the evolution characteristics and its driving mechanism of central urban area in Hunan Province** [13166-5]

13166 0K **Study on the difference in the distribution of urban health resources from the perspective of urban vitality: a case study of Hengyang City central district** [13166-2]

13166 0L **Research on evolution of Western Han Dynasty water basin based on LUCC and NDVI** [13166-28]

13166 0M **Monitoring the spatial-temporal characteristics of land subsidence in Lianyungang City due to reclamation with multi-temporal InSAR technique** [13166-23]

13166 0N **Research on the space design of new office buildings in the post-epidemic context** [13166-14]

13166 0O **Chart quality detection method based on depth range constraints in isobath zones** [13166-18]

13166 0P **Machine-learning-based classification and spatiotemporal analysis of sea ice in the Bohai Sea** [13166-21]

13166 0Q **Highway path roaming based on Gaussian filtering algorithm** [13166-7]

13166 0R **Predicting pit deformation anomalies based on HTM algorithm analysis** [13166-29]

13166 0S **Analysis of verticality measurement by binocular stereo vision system for offshore monopile** [13166-20]

13166 0T **Intelligent surveying and geographic information data updating method based on ArcGIS server** [13166-34]

13166 0U **Semantic information extraction and automatic interpretation of winter wheat based on a deformable full convolutional neural network** [13166-26]

13166 0V **Research on railway limit measurement application based on railway survey robot** [13166-3]

13166 0W **Design of FPGA-based LAMOST fiber position edge detection module** [13166-22]

13166 0X **Research trend analysis of abnormal behavior detection based on knowledge networks** [13166-27]

13166 0Y **Design and application of airport face image detection system** [13166-16]