

PROCEEDINGS OF SPIE

Land Surface and Cryosphere Remote Sensing IV

**Mitchell Goldberg
Jing M. Chen
Reza Khanbilvardi**
Editors

**25–26 September 2018
Honolulu, Hawaii, United States**

Sponsored by
SPIE

Cosponsored by
NASA—National Aeronautics and Space Administration (United States)
RADI—Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences (China)
State Key Laboratory of Remote Sensing Science, Chinese Academy of Sciences (China)
Ministry of Earth Sciences (India)

Cooperating Organizations
University of Hawai'i at Mānoa (United States)
JAXA—Japan Aerospace Exploration Agency (Japan)
NICT—National Institute of Information and Communications Technology (Japan)
ISRO—Indian Space Research Organization (India)
ESSO—Earth System Science Organization (India)

Published by
SPIE

Volume 10777

Proceedings of SPIE 0277-786X, V. 10777

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 SPIDigitalLibrary.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 *Land Surface and Cryosphere Remote Sensing IV*, edited by Mitchell Goldberg, Jing M. Chen, Reza Khanbilvardi, Proceedings of SPIE Vol. 10777 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510621299

ISBN: 9781510621305 (electronic)

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 © 2018, 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/18/\$18.00.

Printed in the United States of America

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

SPIE. DIGITAL LIBRARY

SPIDigitalLibrary.org

Paper Numbering: *Proceedings of SPIE* follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article 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 *Authors*
- vii *Symposium Committees*
- ix *Conference Committee*

REMOTE SENSING OF LAND SURFACE TEMPERATURE

- 10777 OC **Spatial analysis of the Surface Urban Heat Island [10777-11]**

REMOTE SENSING OF SOIL MOISTURE

- 10777 OG **Soil directional (biconical) reflectance in the principal plane with varied illumination angle under dry and saturated conditions [10777-20]**
- 10777 OH **Preliminary study on the applicability of several remote sensing drought indices to agricultural drought monitoring in Gansu province of China [10777-21]**

REMOTE SENSING OF VEGETATION TRAITS AND FUNCTION

- 10777 OL **Dynamic mapping of broadband visible albedo of soil background at global 500-m scale from MODIS satellite products [10777-28]**
- 10777 OM **Canopy conductance index for GPP estimation from it's capacity [10777-29]**
- 10777 ON **Using model-data fusion to downscale solar-induced fluorescence data into a higher spatiotemporal resolution [10777-30]**

FOREST MANAGEMENT AND SAR APPLICATION

- 10777 OO **Spatio-temporal dynamics of shifting cultivation in Upland Myanmar using time series images and implications for REDD+ [10777-31]**

REMOTE SENSING APPLICATIONS TO AGRICULTURE AND OTHER SURFACES

- 10777 OR **Using the UAV-derived NDVI to evaluate spatial and temporal variation of crop phenology at crop growing season in South Korea** [10777-35]
- 10777 OT **Research on remote sensing information and WheatSM model-based winter wheat yield estimation** [10777-39]
- 10777 OU **Remote sensing and GIS model for food security mapping in Gunungkidul Regency Daerah Istimewa Yogyakarta** [10777-40]

POSTER SESSION

- 10777 OX **Evaluating observation and modeling of net radiation based on remote sensing data and CoLM** [10777-10]
- 10777 OY **NDVI and RVI-based dry hot wind comparative monitoring research** [10777-16]
- 10777 OZ **Estimation of summer corn leaf area index in Yucheng County of Shandong Province, China** [10777-37]
- 10777 15 **Reflectance comparison between Himawari-8 AHI and Terra MODIS over a forest of Shikoku region** [10777-48]
- 10777 18 **Paddy rice inventory studies using drone imagery on a small town area in South Korea** [10777-53]

by SPIE-Intl Soc Optical Eng. in Land Surface and Cryosphere Remote Sensing III. Land Surface and Cryosphere Remote Sensing III, Volume 9877; doi:10.1117/12.2228065. Show/hide abstract. The publisher has not yet granted permission to display this abstract. Using remotely sensed satellite products is the most efficient way to monitor global land, water, and forest resource changes, which are believed to be the main factors for understanding global climate change and its impacts. A reliable remotely sensed product should be retrieved quantitatively through models or statistical methods. However, producing global products requires a complex computing system and massive volumes of multi-sensor and multi-temporal remotely sensed data.Â Distribution of Global Land Surface Remote Sensing Products Facilitating Application on Global Change Research. Available online: <http://glass-product.bnu.edu.cn/en/> (accessed on 10 May 2013). Figure 1. GLASS product generation system network structure.