PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 9475

, "Front Matter: Volume 9475," Proc. SPIE 9475, Algorithms for Synthetic Aperture Radar Imagery XXII, 947501 (1 June 2015); doi: 10.1117/12.2197659

Event: SPIE Defense + Security, 2015, Baltimore, MD, United States

PROCEEDINGS OF SPIE

Algorithms for Synthetic Aperture Radar Imagery XXII

**Edmund Zelnio
Frederick D. Garber**
Editors

**23 April 2015
Baltimore, Maryland, United States**

Sponsored and Published by
SPIE

Volume 9475

Proceedings of SPIE 0277-786X, V. 9475

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

Algorithms for Synthetic Aperture Radar Imagery XXII, edited by Edmund Zelnio,
Frederick D. Garber, Proc. of SPIE Vol. 9475, 947501 · © 2015 SPIE
CCC code: 0277-786X/15/\$18 · doi: 10.1117/12.2197659

Proc. of SPIE Vol. 9475 947501-1

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 *Algorithms for Synthetic Aperture Radar Imagery XXII*, edited by Edmund Zelnio, Frederick D. Garber, Proceedings of SPIE Vol. 9475 (SPIE, Bellingham, WA, 2015) Article CID Number.

ISSN: 0277-786X

ISBN: 9781628415919

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.

SPIEDigitalLibrary.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>

SESSION 1	ADVANCED SAR IMAGING AND MOVING TARGET DETECTION
9475 04	Gradient projection for interrupted SAR using the polar format algorithm [9475-4]
9475 06	Knowledge-aided GMTI in a Bayesian framework [9475-6]
9475 07	Clutter suppression interferometry system design and processing [9475-7]
9475 08	Geolocation of moving targets in Gotcha data using multimode processing [9475-8]
SESSION 2	RECOGNITION, DETECTION, AND SIGNATURE ANALYSIS USING SAR
9475 09	SAR image statistics and adaptive signal processing for change detection [9475-10]
9475 0A	Signature predictions of surface targets undergoing turning maneuvers in spotlight synthetic aperture radar imagery [9475-11]
9475 0B	Joint azimuth and elevation localization estimates in 3D synthetic aperture radar scenarios [9475-12]
9475 0C	Impact of ground mover motion and windowing on stationary and moving shadows in synthetic aperture radar imagery [9475-13]
9475 0D	Asymptotic modeling of synthetic aperture radar sensor phenomenology [9475-14]
9475 0F	Deep convolutional neural networks for ATR from SAR imagery [9475-16]
9475 0G	Mixture of factor analyzers models of appearance manifolds for resolved SAR targets [9475-17]
9475 0H	Multinomial pattern matching revisited [9475-18]

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.

Abdelrahman, Tarek, 0G
Bishop, E., 0C
Dammert, Patrik, 09
Deming, Ross, 04, 07
Doerry, A., 0C
Erfin, Emre, 0G
Garren, David A., 0A
Gunther, Jake, 04, 07
Hellsten, Hans, 09
Horvath, Matthew S., 0H
Knight, Chad, 04, 07
Li, Ke Yong, 08
Machado, Renato, 09
Miller, J., 0C
Morgan, David A. E., 0F
Neuroth, Robert M., 0D
Pepin, Matthew, 0B
Pettersson, Mats I., 09
Pillai, Unnikrishna, 08
Potter, Lee C., 06
Raynal, A. M., 0C
Riedl, Michael, 06
Rigling, Brian D., 0D, 0H
Rovito, Todd V., 0D
Scarborough, Steven M., 08
Velten, Vincent J., 0D
Vu, Viet T., 09
Watson, Edward A., 0D
Zelnio, Edmund G., 0D

Conference Committee

Symposium Chair

Nils R. Sandell Jr., Strategic Technology Office, DARPA (United States)

Symposium Co-chair

David A. Logan, BAE Systems (United States)

Conference Chairs

Edmund Zelnio, Air Force Research Laboratory (United States)

Frederick D. Garber, Wright State University (United States)

Conference Program Committee

David Blacknell, Defence Science and Technology Laboratory
(United Kingdom)

Mujdat Cetin, Sabanci University (Turkey)

Gil J. Ettinger, Systems & Technology Research (United States)

Charles V. Jakowatz Jr., Sandia National Laboratories (United States)

Eric R. Keydel, SAIC (United States)

Juan Li, University of Central Florida (United States)

Michael J. Minardi, Air Force Research Laboratory (United States)

Randolph L. Moses, The Ohio State University (United States)

Les Novak, Scientific Systems Company, Inc. (United States)

Lee C. Potter, The Ohio State University (United States)

Brian Rigling, Wright State University (United States)

Timothy D. Ross, Jacobs Technology (United States)

Gerard W. Titi, BAE Systems (United States)

Session Chairs

- 1 Advanced SAR Imaging and Moving Target Detection
Jason T. Parker, Air Force Research Laboratory (United States)
- 2 Recognition, Detection, and Signature Analysis Using SAR
Christopher Paulson, Air Force Research Laboratory (United States)