Real-time Measurements, Rogue Phenomena, and Single-Shot Applications III

Bahram Jalali Daniel R. Solli Günter Steinmeyer Editors

29–30 January 2018 San Francisco, California, United States

Sponsored and Published by SPIE

Volume 10517

Proceedings of SPIE 0277-786X, V. 10517

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 Real-time Measurements, Rogue Phenomena, and Single-Shot Applications III, edited by Bahram Jalali, Daniel R. Solli, Günter Steinmeyer, Proceedings of SPIE Vol. 10517 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

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

ISBN: 9781510615199 ISBN: 9781510615205 (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 Vm7 i ffUb 5ggc WUHY gž & Wži bXYf "]WY bgY Zfca GD-9.

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



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 Conference Committee

LASER TRANSIENTS AND NONREPETITIVE PHENOMENA

10517 04 The picosecond structure of ultra-fast rogue waves (Invited Paper) [10517-3]

REAL-TIME TECHNIQUES

- 10517 09 Time stretch dispersive Fourier transform based single-shot pulse-by-pulse spectrum measurement using a pulse-repetition-frequency-variable gain-switched laser (Invited Paper) [10517-8]
- 10517 0A **Fast wide-field Raman spectroscopic imaging based on multi-channel narrow-band imaging and Wiener estimation (Invited Paper)** [10517-9]
- 10517 0B Accuracy and precision in broadband laser ranging [10517-10]

NONLINEAR DYNAMICS AND MEASUREMENTS I

- 10517 0E Optical Kerr spatiotemporal dark extreme waves (Invited Paper) [10517-13]
- 10517 OF Non-destructive phase and intensity distributed measurements of the nonlinear stage of modulation instability in optical fibers (Invited Paper) [10517-14]
- 10517 0H Megahertz measurement rate wavemeter with sub-picometer resolution using second harmonic generation [10517-16]

NONLINEAR DYNAMICS AND MEASUREMENTS II

- 10517 0M Pulse characterization by cascading nonlinearity inside a spectrometer (CaNIS) [10517-21]
- 10517 0N A real-time multi-gases detection and concentration measurements based on timedivision multiplexed-lasers [10517-22]

POSTER SESSION

10517 OP Laser goniometer used for remote measurement of angular position and movement for metrology [10517-24]