

PROCEEDINGS OF SPIE

Unconventional Imaging and Adaptive Optics 2020

**Jean J. Dolne
Mark F. Spencer**
Editors

**24 August – 4 September 2020
Online Only, United States**

Sponsored and Published by
SPIE

Volume 11508

Proceedings of SPIE 0277-786X, V. 11508

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

Unconventional Imaging and Adaptive Optics 2020, edited by Jean J. Dolne,
Mark F. Spencer, Proc. of SPIE Vol. 11508, 1150801 · © 2020 SPIE
CCC code: 0277-786X/20/\$21 · doi: 10.1117/12.2581610

Proc. of SPIE Vol. 11508 1150801-1

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 *Unconventional Imaging and Adaptive Optics 2020*, edited by Jean J. Dolne, Mark F. Spencer, Proceedings of SPIE Vol. 11508 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

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

ISBN: 9781510638228
ISBN: 9781510638235 (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 © 2020, 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 \$21.00 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/20/\$21.00.

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**

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

ATMOSPHERIC CHARACTERIZATION: JOINT SESSION WITH 11506 AND 11508

- 11508 02 **Focal anisoplanatism influence on dynamically ranged Rayleigh beacon measurements**
[11508-1]
- 11508 06 **Turbulence profiling with a dual beacon Hartmann turbulence sensor using simulation derived weighting functions** [11508-5]

IMAGING THROUGH TURBULENCE: JOINT SESSION WITH 11506 AND 11508

- 11508 0A **A characterization of MFBD performance with partial adaptive optics compensation (Invited Paper)** [11508-9]

ADAPTIVE OPTICS AND DIGITAL HOLOGRAPHY I

- 11508 0D **Predictive local sharpening and digital holography (Invited Paper)** [11508-12]
- 11508 0H **Digital holography three-dimensional imaging using frequency chirping of a laser** [11508-16]

ADAPTIVE OPTICS AND DIGITAL HOLOGRAPHY II

- 11508 0I **Parallelization of digital holographic wavefront sensing (Invited Paper)** [11508-17]

ADAPTIVE OPTICS AND DIGITAL HOLOGRAPHY III

- 11508 0O **Dynamic phase retrieval using adaptive neural networks to enable real-time coherent imaging**
[11508-23]

UNCONVENTIONAL IMAGING AND INTERFEROMETRY

- 11508 0R **An analysis framework for event-based sensor performance (Invited Paper)** [11508-26]

POSTER SESSION

11508 0U **Line-scan hyperspectral imaging microscopy with structured illumination** [11508-29]