

Imaging Spectrometry XXII: Applications, Sensors, and Processing

Monday 20 August 2018

Conference Sessions At A Glance

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1: System Modeling and Data Processing
2: Systems and Designs
3: Applications
4: Radiative Transfer
Posters-Monday

Important Dates

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Abstract Due:
7 February 2018

Author Notification:
16 April 2018

Manuscript Due Date:
25 July 2018

Conference Committee

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Conference Chairs

John F. Silny, Raytheon Space & Airborne Systems (United States)
[Emmett J. Ientilucci](#), Rochester Institute of Technology (United States)

Program Committee continued...

[Mario Parente](#), Univ. of Massachusetts Amherst (United States)
[Robert Sundberg](#), Spectral Sciences, Inc. (United States)

Program Committee

[Robert D. Fiete](#), Harris Corp. (United States)
Ronald B. Lockwood, MIT Lincoln Lab. (United States)
[Pantazis Mouroulis](#), Jet Propulsion Lab. (United States)

MONDAY 20 AUGUST

[Show All Abstracts](#)

Session 1: System Modeling and Data Processing

Monday 20 August 2018
8:20 AM - 10:00 AM
Location: Conv. Ctr. Room 30E


Session Chair: [Emmett J. Ientilucci](#), Rochester Institute of Technology (United States)

The effect of lens aperture for remote sensing of trace gases using Fabry-Perot interferometer-based cameras

Paper 10768-1

Time: 8:20 AM - 8:40 AM

Author(s): Michael K. Yetzbacher, U.S. Naval Research Lab. (United States); Michael J. DePrenger, Tekla Research Inc. (United States)


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Imaging spectrometer F-number optimization for remote sensing of gases

Paper 10768-2

Time: 8:40 AM - 9:00 AM

Author(s): John F. Silny, Brad Flanders, Raytheon Space and Airborne Systems (United States)

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Compressive hyperspectral imaging using total variation minimization

Paper 10768-4

Time: 9:00 AM - 9:20 AM

Author(s): Dennis J. Lee, Eric Shields, Sandia National Labs. (United States)

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Wavelength calibration correction for ground radiance spectra in LWIR hyperspectral imagery

(Canceled)

Paper 10768-5

Time: 9:20 AM - 9:40 AM

Author(s):

Noise reduction of shot-noise dominated hyperspectral imagery using combined PCA with other denoising methods

(Canceled)

Paper 10768-3

Time: 9:40 AM - 10:00 AM
Author(s):

Coffee Break 10:00 AM - 10:30 AM

**Session 2:
Systems and Designs**

Monday 20 August 2018
10:30 AM - 12:10 PM
Location: Conv. Ctr. Room 30E

Session Chair: John F. Silny, Raytheon Space and Airborne Systems (United States)


Selectable magnification reflective triplet (SMaRT) imaging spectrometer

Paper 10768-7
Time: 10:30 AM - 10:50 AM
Author(s): Andrew Bullard, John F. Silny, Raytheon Space and Airborne Systems (United States)

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Tunable light-guide imaging processing snapshot spectrometer (TuLIPSS) for remote sensing

Paper 10768-8
Time: 10:50 AM - 11:10 AM
Author(s): Ye Wang, Jason Dwight, Shuna Cheng, Razvan I. Stoian, Michal E. Pawlowski, David Alexander, Tomasz S. Tkaczyk, Rice Univ. (United States)

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In-scene wavelength calibration of the airborne hyperspectral imaging sensor MAHI

Paper 10768-9
Time: 11:10 AM - 11:30 AM
Author(s): Jeffrey L. Hall, Patrick F. Conforti, Katherine M. Saad, The Aerospace Corp. (United States)

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HyTES high altitude deployment: saturation temperature and plume retrievals

Paper 10768-10
Time: 11:30 AM - 11:50 AM
Author(s): William R. Johnson, Jet Propulsion Lab. (United States)

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Verification and calibration of the DESIS detector

Paper 10768-11
Time: 11:50 AM - 12:10 PM
Author(s): Andreas Eckardt, David Krutz, Thomas Säuberlich, Holger Venus, Deutsches Zentrum für Luft- und Raumfahrt e.V. (Germany); Ralf Reulke, Humboldt-Univ. zu Berlin (Germany)

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Lunch Break 12:10 PM - 1:20 PM


**Session 3:
Applications**

Monday 20 August 2018
1:20 PM - 3:20 PM
Location: Conv. Ctr. Room 30E

Session Chair: [Pantazis Mouroulis](#), Jet Propulsion Lab. (United States)

Hyperspectral imaging aided by artificial neural networks for functional skin characterization

Paper 10768-12
Time: 1:20 PM - 1:40 PM
Author(s): Alexander V. Bykov, Univ. of Oulu (Finland); Evgeny Zharebtsov, Aston Univ. (United Kingdom); Mikhail Kirillin, Daria Loginova, Institute of Applied Physics (Russian Federation); Alexey Popov, Univ. of Oulu (Finland); Alexander Doronin, Yale Univ. (United States); Igor Meglinski, Univ. of Oulu (Finland)

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Development and testing of a cell-free predictive model against Clostridium acetobutylicum batch fermentation

Paper 10768-13
Time: 1:40 PM - 2:00 PM
Author(s): Theresah Korbieh N. Zu, Sanchao Liu, Elliot Gerlach, Christian Sund, U.S. Army Research Lab. (United States)


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Towards non-invasive screening of meat freshness utilizing visible and near-infrared spectroscopy

Paper 10768-14

Time: 2:00 PM - 2:20 PM


Author(s): Motahareh Peyvasteh, Alexey Popov, Alexander V. Bykov, Igor Meglinski, Optoelectronics and Measurement Techniques Lab. (Finland)

[Add To My Schedule](#) **Novel feature extraction method for rapid analysis of water contaminants based on three-dimensional fluorescence and absorption spectroscopy**

Paper 10768-15

Time: 2:20 PM - 2:40 PM


Author(s): Yingtian Hu, Chao Liu, Zheng Shi, Xin Chen, Dongdong Zhao, Xiaoping Wang, Zhejiang Univ. (China)

[Add To My Schedule](#) **MSI vs. HSI in cultural heritage imaging**

Paper 10768-16

Time: 2:40 PM - 3:00 PM


Author(s): Tyler Peery, David Messinger, Rochester Institute of Technology (United States)

[Add To My Schedule](#) **Efficient Detection Algorithm of Chemical Warfare Agents for FTIR-Based Hyperspectral Imagery Using SVM Classifier**

Paper 10768-17

Time: 3:00 PM - 3:20 PM

Author(s): Hyeong-Geun Yu, Jae-Hoon Lee, Dong-Jo Park, KAIST (Korea, Republic of); Hyeon-Woo Nam, Byeong-Hwang Park, Agency for Defense Development (Korea, Republic of)

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Coffee Break 3:20 PM - 3:50 PM

**Session 4:
Radiative Transfer**

Monday 20 August 2018

3:50 PM - 5:10 PM

Location: Conv. Ctr. Room 30E


Session Chair: [Robert Sundberg](#), Spectral Sciences, Inc. (United States)

MODTRAN and the GrossDoppler Line-shape Function

Paper 10768-18

Time: 3:50 PM - 4:10 PM

Author(s): Alexander Berk, Robert Sundberg, Spectral Sciences, Inc. (United States)

[Add To My Schedule](#) **An improved in-scene atmospheric retrieval and correction algorithm for long-wavelength infrared hyperspectral imagery**

Paper 10768-19

Time: 4:10 PM - 4:30 PM


Author(s): Lawrence Bernstein, Jonathan Gelbord, Steven Adler-Golden, Nevzat Guler, Robert Sundberg, Spectral Sciences, Inc. (United States); Patrick F. Conforti, The Aerospace Corp. (United States)

[Add To My Schedule](#) **Characterizing temperature and water vapor of the environment using the standardized atmosphere generator (SAG) empirical model**

Paper 10768-21

Time: 4:30 PM - 4:50 PM

Author(s): Raphael Panfili, Hoang Dothe, John Gruninger, James Duff, Spectral Sciences, Inc. (United States)

[Add To My Schedule](#) **NLTERAD (Non-local thermodynamic equilibrium radiance) Model**

Paper 10768-22

Time: 4:50 PM - 5:10 PM

Author(s): Hoang Dothe, James Duff, Raphael Panfili, Spectral Sciences, Inc. (United States); Nick Glumac, University of Illinois Urbana-Champaign (United States)

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**Session PMon:
Posters-Monday**

Monday 20 August 2018

5:30 PM - 7:30 PM

Location: Conv. Ctr. Room 20C


Conference attendees are invited to view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions. Poster authors, view poster presentation guidelines at <http://spie.org/OPPPosterGuidelines>.

Low cost hyperspectral systems for atmospheric and surface studies

Paper 10768-23

Time: 5:30 PM - 7:30 PM


Author(s): Andreas Eckardt, Deutsches Zentrum für Luft- und Raumfahrt e.V. (Germany); Ralf Reulke, Humboldt-Univ. zu Berlin (Germany)

[Add To My Schedule](#) **A position sensitive detector based on red-shift in photoluminescence spectra**

Paper 10768-24

Time: 5:30 PM - 7:30 PM

Author(s): Masamichi Ohta, Yasuhiro Tsutsumi, Ryo Matsumura, Ichiro Fujieda, Ritsumeikan Univ. (Japan)

[Add To My Schedule](#) **Two-stage photoluminescence conversion for two-dimensional position sensing**

Paper 10768-25

Time: 5:30 PM - 7:30 PM

Author(s): Yasuhiro Tsutsumi, Masamichi Ohta, Takamasa Kohmoto, Ryo Matsumura, Ichiro Fujieda, Ritsumeikan Univ. (Japan)

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