

IEEE PHOTONICS SOCIETY

SUMMER TOPICALS MEETING SERIES 2022

11-13 July 2022
Cabo San Lucas, Mexico
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General Chair
Cristian Antonelli,
University of L'Aquila, Italy



IEEE PHOTONICS SOCIETY
SUMMER TOPICALS
MEETING SERIES 2022

| | | | | | | | |
|----------------------|--|---|---|--------------------------|---|---|---|
| Sunday July 10 | 6:00pm – 9:00pm SUNDAY EVENING SOCIAL – <i>Black Marlin</i> <i>*Registration Required</i> | | | | | | |
| Monday July 11 | PSF <i>Dorado I</i> | ROP <i>Dorado II</i> | SDM <i>Dorado III</i> | SIMP <i>Dorado IV</i> | SQL <i>Dorado V</i> | TI <i>Las Montañas B</i> | UWB <i>Las Montañas C</i> |
| 8:30am – 10:00am | | 8:30am-10:15am MB1 Programmable Photonics: Systems and Architectures I | MC1 SDM Intro and Transmission I | MD1 SIMP I | | MF1 Keynote Talks I | 8:30am-9:00am MG1 Fibres, Amplifiers, and Devices I |
| 10:00am - 10:30am | BREAK - <i>Dorado Terrace</i> | | | | | | |
| 10:30am – 12:00pm | | MB2 Programmable Photonics: Devices I | MC2 Novel Techniques in SDM | MD2 SIMP II | 10:30am-11:45am ME2 Quantum Dot Lasers and Applications | MF2 Advanced THz Imaging Techniques I | 10:30am-11:30am MG2 System Modelling and Optical Networking I |
| 12:00pm - 1:30pm | LUNCH – <i>On Own</i> | | | | | | |
| 1:30pm – 3:00pm | | 1:30pm-2:30pm MB3 Reconfigurable Metasurfaces | MC3 SDM Integration | MD3 SIMP III | 1:30pm-2:45pm ME3 Quantum Cascade Photonic Devices | 1:30pm-3:30pm MF3 Bio and Chemical THz Imaging I | 1:30pm-2:00pm MG3 System Modelling and Optical Networking II |
| 3:00pm – 3:30pm | BREAK - <i>Dorado Terrace</i> | | | | | | |
| 3:30pm- 5:00pm | | | 3:30pm–4:30pm MC4 SDM Fibers and Devices I | | | | |
| 6:00pm – 8:00pm | WELCOME RECEPTION - <i>Whale Watching</i> | | | | | | |

2022 SUMMER TOPICALS MEETING SERIES

Program-at-a-Glance

| Tuesday July 12 | PSF <i>Dorado I</i> | ROP <i>Dorado II</i> | SDM <i>Dorado III</i> | SIMP <i>Dorado IV</i> | SQL <i>Dorado V</i> | TI <i>Las Montañas B</i> | UWB <i>Las Montañas C</i> |
|--------------------|--|--|--|--|--|---|--|
| 8:30am – 10:00am | 8:20am-10:00am TuA1 Mobile Atomic Clock Sources and Applications | TuB1 Programmable Photonics: Systems and Architectures II | 9:00am-10:00am TuC1 SDM Fibers and Devices II | TuD1 SIMP IV | 8:30am-9:45am TuE1 Single Photon Emission & Detection | TuF1 Keynote Talks II | 8:30am-9:30am TuG1 Fibres, Amplifiers, and Devices II |
| 10:00am - 10:30am | BREAK - <i>Dorado Terrace</i> | | | | | | |
| 10:30am – 12:00pm | TuA2 Optical Frequency Comb Sources and Applications I | 10:30am–11:45am TuB2 Programmable Photonics: Devices II | TuC2 SDM Channel Modelling | 10:30am-11:30am TuD2 SIMP V | | TuF2 Advanced THz Imaging Techniques II | TuG2 Transmission Systems I |
| 12:00pm - 1:30pm | LUNCH – <i>On Own</i> | | | | | | |
| 1:30pm – 3:00pm | 1:30pm-2:30pm TuA3 Optical Frequency Comb Sources and Applications II | | TuC3 Focus Session: SDM Research in Germany | TuD3 SIMP VI | 1:30pm-2:45pm TuE3 Topological Lasers & VCSEL | 1:30pm-2:00pm TuF3 THz Photonics and Optoelectronics I | TuG3 Transmission Systems II |
| 3:00pm – 3:30pm | BREAK - <i>Dorado Terrace</i> | | | | | | |
| 3:30pm-5:00pm | TuA4 Novel Sources, Synchronization and Sensing | | 3:30pm-4:30pm TuC4 SDM Transmission and Integration | 3:30pm-4:15pm TuD4 SIMP VII | 3:30pm-4:30pm TuE4 Applications of Quantum Technologies I | | |

2022 SUMMER TOPICALS MEETING SERIES

Program-at-a-Glance

| Wednesday July 13 | PSF <i>Dorado I</i> | ROP <i>Dorado II</i> | SDM <i>Dorado III</i> | SIMP <i>Dorado IV</i> | SQL <i>Dorado V</i> | TI <i>Las Montañas B</i> | UWB <i>Las Montañas C</i> |
|----------------------|---|--|---|--------------------------|--|---|--|
| 8:30am – 10:00am | 8:30am – 9:45am WA1 Stable Laser Sources and Technologies I | 8:30am-9:45am WB1 Programmable Photonics: Systems and Architectures III | 8:30am-10:30am WC1 EXAT / SDM Fibers | | 8:30am-10:30am WE1 Semiconductor Quantum Light Sources | WF1 Keynote Talks IV | WG1 Fibres, Amplifiers, and Devices III |
| 10:00am - 10:30am | BREAK - Dorado Terrace | | | | | | |
| 10:30am – 12:00pm | 10:30am-11:30am WA2 Stable Laser Sources and Technologies II | | 10:45am-12:15pm WC2 SDM Modes | | 11:00am-12:00pm WE2 Applications of Quantum Technologies II | 10:30am-11:30am WF2 THz Bio and Chemical Imaging II | 10:30am – 11:45am WG2 System Modelling and Optical Networking III |
| 12:00pm - 1:30pm | LUNCH – On Own | | | | | | |
| 1:30pm – 3:00pm | 1:30pm-2:30pm WA3 Distributed Fiber Sensing I | | | | | 1:30pm-3:15pm WF3 THz Photonics and Optoelectronics II | |
| 3:00pm – 3:30pm | BREAK - Dorado Terrace | | | | | | |
| 3:30pm-5:00pm | 3:30pm-5:15pm WA4 Distributed Fiber Sensing II | | | | | | |



Monday, 11 July

8:30am **MB1 -**
MB1 - Programmable Photonics: Systems and Architectures I
Dorado II

Chaired by: Tian Gu (United States)

8:30am **MB1.1 (Tutorial) - Reconfigurable Photonics and Computing of the Future**

» S. J. Ben Yoo (United States)¹ (1. University of California, Davis)

9:15am **MB1.2 (Invited) - Integrated Microwave Photonics: A beamformer for Scan-on-Receive Synthetic Aperture Radar**

» Chris Roeloffzen (Netherlands)¹, Ahmad Mohammad (Netherlands)¹, Paul van Dijk (Netherlands)¹, Paolo Ghelfi (Italy)², Manuel Reza (Italy)², Giovanni Serafino (Italy)², Tobias Otto (Germany)³, Simone Gabrielli (Germany)³, Dzianis Saladukha (Ireland)⁴, Ricardo Roggan (Germany)⁵, Matthias Kolb (Germany)⁵, Hakimeh Mohammadhosseini (Belgium)⁶, Dave Bail (Belgium)⁶ (1. LioniX International, 2. Scuola Superiore Sant'Anna, 3. OHB System AG, 4. Tyndall National Institute, 5. Astrofein, 6. Antwerp Space)

9:45am **MB1.3 (Invited) - Multimode silicon photonics for ultra-low-loss and low-phase-error light propagation**

» Daixin Dai (China)¹ (1. Zhejiang University)

8:30am **SDM Intro -**
SDM Intro

Dorado III

Chaired by: Georg Rademacher (Japan)

8:30am **MD1 -**
MD1 - SIMP I

Dorado IV

Chaired by: Oussama Moutanabbir (Canada) and Vincent Reboud (France)

8:30am **MD1.1 (Invited) - Progress in GeSn photonics**

» Dan Buca (Germany)¹, Detlev Grützmacher (Germany)², Giovanni Isella (Italy)³, Michael Oehme (Germany)⁴, Jeremy Witzens (Germany)⁵, Zoran Ikonik (United Kingdom)⁶, Giovanni Capellini (Germany)⁷, Moustafa El Kurdi (France)⁸ (1. FZJ, 2. PGI-9, Forschungszentrum Juelich, 3. LNESS Dipartimento di Fisica, Politecnico di Milano, 4. University of Stuttgart, 5. RWTH Aachen, 6. University of Leeds, 7. IHP-Leibniz-Institut für innovative Mikroelektronik, 8. Université Paris Saclay)

9am

MD1.2 (Invited) - GeSn Laser Technologies for Integrated Photonics

» Xuncheng Shi (Singapore)¹, Daniel Burt (Singapore)¹, Youngmin Kim (Singapore)¹, Hyo-Jun Joo (Singapore)¹, James Tan (Singapore)¹, Melvina Chen (Singapore)¹, Yongduck Jung (Singapore)¹, Lin Zhang (Singapore)¹, Chuan Seng Tan (Singapore)¹, Chulwon Lee (Korea, Republic of)², Yong-Hoon Cho (Korea, Republic of)², Zoran Ikonik (United Kingdom)³, Yi-Chiau Huang (United States)⁴, Simone Assali (Canada)⁵, Oussama Moutanabbir (Canada)⁵, Donguk Nam (Singapore)¹ (1. Nanyang Technological University, 2. KAIST, 3. University of Leeds, 4. Applied Materials, 5. Ecole Polytechnique de Montreal)

9:30am

MD1.3 (Invited) - Towards a SiGe-based laser

» Erik Bakkers (Netherlands)¹ (1. Eindhoven)

8:30am **MF1 -**
MF1 - Keynote Talks I

Las Montañas B

Chaired by: AKIRA SATOU (Japan)



Continued from Monday, 11 July

8:30am **MF1.1 (Keynote) - Terahertz Imaging for Nanoparticle-assisted Laser Therapy**
 » Junliang Dong (Canada)¹, Holger Breitenborn (Canada)¹, Riccardo Piccoli (Canada)¹, Lucas Besteiro (Canada)¹, Pei You (Canada)¹, Diego Caraffini (Canada)¹, Zhiming Wang (China)², Alexander Govorov (United States)³, Rafik Naccache (Canada)⁴, Fiorenzo Vetrone (Canada)¹, Luca Razzari (Canada)¹, Roberto Morandotti (Canada)¹ (1. INRS-EMT, 2. University of Electronic Science and Technology of China, 3. Ohio University, 4. Concordia University)

9:15am **MF1.2 (Keynote) - Advanced laser-driven terahertz-wave parametric source for nondestructive testing applications**
 » Hiroaki Minamide (Japan)¹ (1. RIKEN)

8:30am **MG1 -
MG1 - Fibres, Amplifiers, and Devices I**
Las Montañas C
 Chaired by: Wladek Forysiak (United Kingdom)

8:30am **MG1.2 (Invited) - Recent Advance in ultra-wideband Raman amplifiers**
 » Mingming Tan (United Kingdom)¹, Pratim Hazarika (United Kingdom)¹, Wladek Forysiak (United Kingdom)¹ (1. Aston Institute of Photonic Technologies, Aston University, Birmingham)

8:45am **MC1 -
MC1 - Transmission I**
Dorado III
 Chaired by: Georg Rademacher (Japan)

8:45am **MC1.1 (Tutorial) - Optical fiber transmission with coupled SDM fibers**
 » Roland Ryf (United States)¹ (1. Nokia Bell Labs)

9:30am **MC1.2 (Invited) - Unrepeated Transmission Using SDM Fibers**
 » Ruben Luis (Japan)¹, Ben Puttnam (Japan)¹, Georg Rademacher (Japan)¹, Yoshinari Awaji (Japan)¹, Hideaki Furukawa (Japan)¹ (1. National Institute of Information and Communications Technology)

10am **Break**
Dorado Terrace

10:30am **MB2 -
MB2 - Programmable Photonics: Devices I**
Dorado II
 Chaired by: Tian Gu (United States)

10:30am **MB2.1 (Invited) - Low power phase shifter using liquid crystal on an integrated silicon photonics platform**
 » Lukas Van Iseghem (Belgium)¹, Umar Khan (Belgium)¹, Ewout Picavet (Belgium)¹, Alain Yuji Takabayashi (Switzerland)², Peter Verheyen (Belgium)³, Niels Quack (Switzerland)², Klaartje De Buysser (Belgium)¹, Jeroen Beeckman (Belgium)¹, Wim Bogaerts (Belgium)⁴ (1. Ghent University, 2. Ecole Polytechnique Federale de Lausanne, 3. IMEC vzw, 4. Gent University)

11am **MB2.2 (Invited) - Reconfigurable Optical Logic Switches Using Microdisk Resonators**
 » Winnie N. Ye (Canada)¹, Md Abduhu Ruhul Fatin (Canada)¹, Dusan Gostimirovic (Canada)¹ (1. Carleton University)

11:30am **MB2.3 - Configurable Modulator based Optical Carrier Frequency Suppressed Intensity Modulation**
 » Hong Deng (Belgium)¹, Wim Bogaerts (Belgium)¹ (1. Gent University)

11:45am **MB2.4 - Towards large-scale InP optical phased arrays**
 » Victor Dolores Calzadilla (Netherlands)¹, Marco Gagino (Netherlands)¹, Florian Lemaitre (Netherlands)¹, Kevin A. Williams (Netherlands)¹ (1. Technical University of Eindhoven)



| Continued from Monday, 11 July | | | |
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| 10:30am | MC2 - MC2 - Novel Techniques in SDM <i>Dorado III</i> Chaired by: Ben Puttnam (Japan) | 11am | MD2.2 (Invited) - Silicon Photonics for Mid-Infrared Spectrometers on Chip » Callum Stirling (United Kingdom) ¹ , Wei Chen (United Kingdom) ¹ , Lauren Reid (United Kingdom) ¹ , Colin Mitchell (United Kingdom) ¹ , Milos Nedeljkovic (United Kingdom) ¹ , <u>Goran Mashanovich</u> (United Kingdom) ¹ (1. University of Southampton) |
| 10:30am | MC2.1 (Invited) - Optimal modes for spatially multiplexed free-space communications » <u>Aniceto Belmonte</u> (Spain) ¹ , Joseph Kahn (United States) ² (1. Department of Signal Theory and Communications, Technical University of Catalonia, 2. Stanford University) | 11:30am | MD2.3 (Invited) - Achievable Performance of Group-IV Mid-IR Photodetectors and Longwave IR Quantum Cascade Detectors » <u>Greg Sun</u> (United States) ¹ , Richard Soref (United States) ¹ , Guo-En Chang (Taiwan) ² , Shui-Qing Yu (United States) ³ (1. University of Massachusetts Boston, 2. National Chung-Cheng University, 3. University of Arkansas) |
| 11am | MC2.2 (Invited) - Dual-Comb Swept-Wavelength Interferometry for SDM Device Characterization » <u>Jochen Schröder</u> (Sweden) ¹ , Ekaterina Deriushkina (Sweden) ¹ , Mikael Mazur (United States) ² , Magnus Karlsson (Sweden) ³ (1. Department of Microtechnology and Nanoscience, Chalmers University of Technology, 2. Nokia Bell Labs, 3. Micr) | 10:30am | ME2 - ME2 - Quantum Dot Lasers and Applications <i>Dorado V</i> Chaired by: Peter Snowton (United Kingdom) |
| 11:30am | MC2.3 (Invited) - Space Division Multiplexing in complex systems: Techniques for mitigation and sensing of turbulent environments » <u>Martin Lavery</u> (United Kingdom) ¹ (1. University of Glasgow) | 10:30am | ME2.1 (Invited) - Semiconductor Quantum Dot Based Quantum Light Sources for Classical and Quantum Optical Communication » <u>JP Reithmaier</u> (Germany) ¹ (1. University of Kassel, INA, CINSaT) |
| 10:30am | MD2 - MD2 - SIMP II <i>Dorado IV</i> Chaired by: Guo-En Chang (Taiwan) and Oussama Moutanabbir (Canada) | 11am | ME2.2 (Invited) - Robust high temperature operation of epitaxially grown quantum dot lasers on (001) Si » <u>Chen Shang</u> (United States) ¹ , Eamonn Hughes (United States) ¹ , Yating Wan (United States) ¹ , Mario Dumont (United States) ¹ , Rosalyn Koscica (United States) ¹ , Jennifer Selvidge (United States) ¹ , Robert Herrick (United States) ² , Kunal Mukherjee (United States) ³ , John Bowers (United States) ¹ (1. UC SANTA BARBARA, 2. Intel, 3. Stanford University) |
| 10:30am | MD2.1 (Invited) - SiGeSn-based Optoelectronics for Photonics Integrated Circuits » <u>Shui-Qing Yu</u> (United States) ¹ , Gregory Salamo (United States) ¹ , <u>Wei Du</u> (United States) ² , Baohua Li (United States) ³ , Greg Sun (United States) ⁴ , Richard Soref (United States) ⁴ , Yong-Hang Zhang (United States) ⁵ , Guo-En Chang (Taiwan) ⁶ (1. University of Arkansas, 2. Wilkes University, 3. Arktonics, LLC, 4. University of Massachusetts Boston, 5. Arizona State University, 6. National Chung-Cheng University) | 11:30am | ME2.3 - Quantum Dots for Photonic Integrated Circuits: From Isolation-Free to Amplitude Noise Squeezing » <u>Bozhang Dong</u> (United States) ¹ , Shiyuan Zhao (France) ² , Jianan Duan (China) ³ , Heming Huang (France) ² , Justin Norman (United States) ¹ , John Bowers (United States) ⁴ , Frederic Grillot (France) ² (1. University of California, Santa Barbara, 2. Telecom Paris, 3. Harbin Institute of Technology, Shenzhen, 4. Department of Electrical and Computer Engineering, University of California Santa Barbara) |



| Continued from Monday, 11 July | | | |
|--------------------------------|---|--------|---|
| 10:30am | MF2 - MF2 - Advanced THz Imaging Techniques I <i>Las Montañas B</i> Chaired by: AKIRA SATOU (Japan) | 11am | MG2.3 (Invited) - Dynamic resource allocation in different ultrawideband optical network topologies » <u>Gabriel Saavedra</u> (Chile) ¹ , Felipe Calderon (Chile) ² , Danilo Bórquez-Paredes (Chile) ³ , Nicolas Jara (Chile) ⁴ , Ricardo Olivares (Chile) ⁴ , Ariel Leiva (Chile) ² , Alejandra Beghelli (United Kingdom) ⁵ (1. Universidad de Concepción, 2. Pontificia Universidad Católica de Valparaíso, 3. Universidad Adolfo Ibáñez, 4. Universidad Técnica Federico Santa María, 5. University College London) |
| 10:30am | MF2.1 (Invited) - The Nonlinear Ghost Imaging Route to Harnessing Random Propagation » Vittorio Cecconi (United Kingdom) ¹ , Vivek Kumar (United Kingdom) ¹ , Juan Sebastian Toterogongora (United Kingdom) ¹ , Luke Peters (United Kingdom) ¹ , Luana Olivieri (United Kingdom) ¹ , Jacopo Bertolotti (United Kingdom) ² , Alessia Pasquazi (United Kingdom) ¹ , <u>Marco Peccianti</u> (United Kingdom) ¹ (1. University of Sussex, 2. University of Exeter) | 12pm | Lunch - On Own |
| 11am | MF2.2 (Invited) - Subcycle sampling of THz and mid-IR quantum radiation » <u>Denis Seletskiy</u> (Canada) ¹ , Patrick Cusson (Canada) ¹ , Stéphane Virally (Canada) ¹ (1. Polytechnique Montréal) | 1:30pm | MB3 - MB3 - Reconfigurable Metasurfaces <i>Dorado II</i> Chaired by: Tian Gu (United States) |
| 11:30am | MF2.3 (Invited) - Single-cycle THz fields electro-optical sampling with single-photon detectors » <u>Taylor Shields</u> (United Kingdom) ¹ , Adetunmise C. Dada (United Kingdom) ¹ , Lenny Hirsch (United Kingdom) ¹ , Seungjin Yoon (United Kingdom) ¹ , Jonathan M. R. Weaver (United Kingdom) ¹ , Daniele Faccio (United Kingdom) ¹ , Lucia Caspani (United Kingdom) ² , Marco Peccianti (United Kingdom) ³ , Matteo Clerici (United Kingdom) ¹ (1. University of Glasgow, 2. University of Strathclyde, 3. University of Sussex) | 1:30pm | MB3.1 (Invited) - Ultimate limits to reconfigurability and bandwidth in nanophotonic response » <u>Owen Miller</u> (United States) ¹ (1. Yale University) |
| 10:30am | MG2 - MG2 - System Modelling and Optical Networking I <i>Las Montañas C</i> Chaired by: Pratim Hazarika (United Kingdom) | 2pm | MB3.3 (Invited) - Actively Manipulate Terahertz Waves » <u>Yifei Zhang</u> (China) ¹ , Mingming Feng (China) ¹ , Haotian Ling (China) ² , Baoqing Zhang (China) ¹ , Qingpu Wang (China) ¹ , Aimin Song (United Kingdom) ³ (1. Shandong University, 2. Qilu Aerospace Information Research Institute, 3. University of Manchester) |
| 10:30am | MG2.2 (Invited) - Network management of wideband optical networks » <u>Nicola Sambo</u> (Italy) ¹ (1. Scuola Superiore Sant'Anna) | 1:30pm | MC3 - MC3 - SDM Integration <i>Dorado III</i> Chaired by: Tobias Fehenberger (Germany) |
| | | 1:30pm | MC3.1 (Invited) - Prospects of massive parallelism in Silicon Photonics transceivers » <u>Guilhem de Valicourt</u> (United States) ¹ (1. Nubis Communications) |



| Continued from Monday, 11 July | | | |
|--------------------------------|---|--------|---|
| 2pm | MC3.2 (Invited) - Few-mode spot size converters for coupling fiber to low-contrast index PICs » Oscar González-Cortez (Mexico) ¹ , Amado Velázquez-Benítez (Mexico) ¹ (1. Instituto de Ciencias Aplicadas y Tecnología, Universidad Nacional Autónoma de México, Circuito Exterior S/N, Ciudad Universitaria) | 1:30pm | ME3.1 (Invited) - Beyond pulses: frequency combs in active cavities » David Burghoff (United States) ¹ (1. University of Notre Dame) |
| 2:30pm | MC3.3 (Invited) - SDM Research in Germany: Perspectives for future connectivity » Dimitar Kroushkov (Germany) ¹ (1. VDI/VDE-IT) | 2pm | ME3.2 (Invited) - Generating Quantum Cascade Laser Datasets for Applications in Machine Learning » Andres Correa Hernandez (United States) ¹ , Ming Lyu (China) ² , Claire Gmachl (United States) ¹ (1. Princeton University, 2. Beijing Qingtian Smart Truck Inc.) |
| 1:30pm | MD3 - MD3 - SIMP III <i>Dorado IV</i> Chaired by: Guo-En Chang (Taiwan) | 2:30pm | ME3.4 - Interband cascade technology for next-generation mid-IR communication and quantum applications » Olivier Spitz (France) ¹ , Shiyuan Zhao (France) ¹ , Pierre Didier (France) ¹ , Daniel Diaz-Thomas (France) ² , Laurent Cerutti (France) ² , Alexei Baranov (France) ² , Hedwig Knoetig (Austria) ³ , Robert Weih (Germany) ⁴ , Johannes Koeth (Germany) ⁴ , Benedikt Schwarz (Austria) ³ , Frederic Grillot (France) ¹ (1. Telecom Paris, 2. Université de Montpellier, 3. TU Wien, 4. Nanoplus) |
| 1:30pm | MD3.1 (Invited) - High-throughput atomistic calculations for direct-gap group-IV semiconductor alloys » Christopher Broderick (United States) ¹ , Michael Dunne (Ireland) ² , Daniel Tanner (Belgium) ³ , Sarita Das (Ireland) ² , Eoin O'Reilly (Ireland) ² (1. University of California, Santa Barbara, 2. Tyndall National Institute, 3. Université de Liège) | 1:30pm | MF3 - MF3 - Bio and Chemical THz Imaging I <i>Las Montañas B</i> Chaired by: Hiroaki Minamide (Japan) |
| 2pm | MD3.2 (Invited) - Thermal and optical properties of GeSn/SiGeSn layers » Giovanni Capellini (Germany) ¹ (1. IHP-Leibniz-Institut für innovative Mikroelektronik) | 1:30pm | MF3.1 (Invited) - Inspecting the solid state of pharmaceuticals dispersed in a paper matrix using terahertz time-domain spectroscopy » Jan Ornik (Germany) ¹ , Lara Heidrich (Germany) ¹ , Daniel Knoth (Germany) ² , Robert Schesny (Germany) ² , Cornelia M. Keck (Germany) ² , Enrique Castro-Camus (Germany) ¹ , Martin Koch (Germany) ¹ (1. Department of Physics and Material Sciences Center, Philipps-Universität Marburg, 2. Department of Pharmaceuticals and Biopharmaceutics, Philipps-Universität Marburg) |
| 2:30pm | MD3.3 (Invited) - Short-range order in Si-Ge-Sn alloys » Xiaochen Jin (United States) ¹ , Shunda Chen (United States) ¹ , Jifeng Liu (United States) ² , Tianshu Li (United States) ¹ (1. George Washington University, 2. Dartmouth College) | | |
| 1:30pm | ME3 - ME3 - Quantum Cascade Photonic Devices <i>Dorado V</i> Chaired by: Stephan Reitzenstein (Germany) | | |



| Continued from Monday, 11 July | | | |
|--------------------------------|---|--------|--|
| 2pm | MF3.2 (Invited) - A tour of our applications of terahertz spectroscopy in biology and medicine » <u>Enrique Castro-Camus</u> (Germany) ¹ , Gorette Hernandez-Cardoso (Germany) ² , Ahishek K Singh (Mexico) ³ , Arely Perez-Lopez (Mexico) ⁴ , June Simpson (Mexico) ⁴ , Jose Antonio Morales Hernandez (Mexico) ⁵ , Socorro Josefina Villanueva Rodriguez (Mexico) ⁵ , Lauro Fabian Amador-Medina (Mexico) ⁶ , Gerardo Gutierrez-Torres (Mexico) ³ , Edgar Reyes-Reyes (Mexico) ⁷ , Irving Salas-Gutierrez (Mexico) ⁸ , Blanca Olivia Murillo-Ortiz (Mexico) ⁶ , Martin Koch (Germany) ⁹ (1. Philipps-Universität Marburg, 2. Philipps-Universität Marburg, 3. Centro de Investigaciones en Optica, A.C., 4. CINVESTAV, 5. CIATEJ, 6. IMSS, 7. Centro, 8. Hospital Angeles Leon, 9. Department of Physics and Material Sciences Center, Philipps-Universität Marburg) | 1:30pm | MG3.2 (Invited) - Opportunities and Challenges for Discrete Raman Amplifiers in Ultrawideband Transmission Systems » Md Asif Iqbal (United Kingdom) ¹ , <u>Mingming Tan</u> (United Kingdom) ² , Wladek Forysiak (United Kingdom) ² , Andrew Lord (United Kingdom) ¹ (1. BT Applied Research, BT, 2. Aston Institute of Photonic Technologies, Aston University, Birmingham) |
| 2:30pm | MF3.3 (Invited) - Review and perspectives of THz solid immersion microscopy » Nikita Chernomyrdin (Russian Federation) ¹ , Maksim Skorobogatiy (Canada) ² , Kirill Zaytsev (Russian Federation) ³ , <u>Guofu Xu</u> (Canada) ⁴ (1. Prokhorov General Physics Institute of the Russian Academy of Sciences, 2. Department of Engineering Physics, Polytechnique Montreal Montreal, Canada, 3. Prokhorov General Physics Institute of RAS, 4. Polytechnique Montréal, Engineering Physics) | 3pm | Break <i>Dorado Terrace</i> |
| 3pm | MF3.4 (Invited) - Enhancing Terahertz Imaging with Polarization and Optical Imaging for Skin Cancer Detection. » <u>Anna Yaroslavsky</u> (United States) ¹ (1. University of Massachusetts) | 3pm | Virtual Labs Tour - Open to all attendees <i>Dorado I</i> |
| 1:30pm | MG3 - MG3 - System Modelling and Optical Networking II <i>Las Montañas C</i> Chaired by: Wladek Forysiak (United Kingdom) | 3:30pm | MC4 - MC4 - SDM Videos I <i>Dorado III</i> Chaired by: Georg Rademacher (Japan) |
| | | 3:30pm | MC4.1 (Invited) - Mode Division Multiplexing via Co-Packaged VCSEL Matrix » <u>Chenhui Li</u> (China) ¹ , Haoshuo Chen (United States) ² , Nick Fontaine (United States) ² , Bob Farah (United States) ² , Cristian Bolle (United States) ² , Roland Ryf (United States) ² , Mikael Mazur (United States) ² , Yuchen Song (Netherlands) ³ , Oded Raz (Netherlands) ³ , Christian Neumeyr (Germany) ⁴ , Juan Carlos Alvarado (United States) ⁵ , Rodrigo Amezcua-Correa (United States) ⁵ , Marianne Bigot-Astruc (France) ⁶ , Pierre Sillard (France) ⁶ , David T. Neilson (United States) ² (1. Zhejiang University, 2. Nokia Bell Labs, 3. Eindhoven University of Technology, 4. Vertilas GmbH, 5. University of Central Florida, 6. Prysmian Group) |
| | | 4pm | MC4.2 (Invited) - Long-haul Weakly-coupled FMF transmission and enabling components » <u>Juhao Li</u> (China) ¹ (1. Peking University) |
| | | 6pm | Welcome Reception <i>Whale Watching</i> |



Tuesday, 12 July

- 8:20am **PSF Introduction**
Dorado I
Chaired by: Frank Quinlan (United States)
- 8:30am **TuA1 -
TuA1 - Atomic Clock Sources and Applications**
Dorado I
Chaired by: Frank Quinlan (United States)
- 8:30am **TuA1.1 (Invited) - Laser-Enabled Coherent Sources and Earth Sensing**
» [Leo Hollberg](#) (United States)¹ (1. Stanford University)
- 9am **TuA1.2 (Invited) - Integrated Hardware for Optical Timekeeping**
» [Martin Boyd](#) (United States)¹ (1. Vector Atomic)
- 9:30am **TuA1.3 (Invited) - Optical frequency references based on microfabricated vapor cells**
» [Matthew Hummon](#) (United States)¹, Jacob Pate (United States)¹, John Kitching (United States)¹ (1. National Institute of Standards and Technology)
- 8:30am **TuB1 -
TuB1 - Programmable Photonics: Systems and Architectures II**
Dorado II
Chaired by: Tian Gu (United States)
- 8:30am **TuB1.1 (Plenary) - Large-Scale Integrated Photonics for Accelerated Communication and Computing**
» [Ray Beausoleil](#) (United States)¹ (1. Hewlett Packard Laboratories)

- 9:15am **TuB1.2 (Invited) - Quantifying resolution and power use in integrated photonic accelerators**
» [Alexander Tait](#) (Canada)¹ (1. Queen's University)
- 9:45am **TuB1.3 - Establishing Multiple Chip-to-Chip Orthogonal Free-Space Optical Channels using Programmable Silicon Photonics Meshes**
» [Maziyar Milanizadeh](#) (Italy)¹, Seyed Mohammad Seyedin Navadeh (Italy)¹, Francesco Zanetto (Italy)¹, Vittorio Grimaldi (Italy)¹, Christian De Vita (Italy)¹, Giorgio Ferrari (Italy)¹, David A.B. Miller (United States)², Andrea Melloni (Italy)¹, Francesco Morichetti (Italy)¹ (1. Politecnico di Milano, 2. Stanford University)
- 8:30am **TuD1 -
TuD1 - SIMP IV**
Dorado IV
Chaired by: Vincent Reboud (France)
- 8:30am **TuD1.1 (Tutorial) - Polycrystalline Lead Chalcogenide Mid-IR Photodetectors for Integrated Si Photonics**
» [Anu Agarwal](#) (United States)¹ (1. Massachusetts Institute of Technology)
- 9:15am **TuD1.2 (Invited) - Room temperature GeSn laser**
» [Moustafa El Kurdi](#) (France)¹, Andjelika Bjelajac (France)¹, Maksym Gromovyi (France)¹, Gilles Patriarche (France)¹, Xavier Lafosse (France)¹, Etienne Herth (France)¹, Konstantinos Pantzas (France)¹, Isabelle Sagnes (France)¹, Davide Spirito (Germany)², Giovanni Capellini (Germany)², Vincent Calvo (France)³, Nicolas Pauc (France)³, Alexei Tchebnokov (France)³, Vincent Reboud (France)³, Dan Buca (Germany)⁴, Jean-Michel Hartmann (France)³ (1. C2N CNRS-UPSaclay, 2. IHP-Leibniz-Institut für innovative Mikroelektronik, 3. CEA, 4. FZJ)
- 9:45am **TuD1.3 - Polarization-Induced Transparency in All dielectric Group-IV Metasurfaces**
» [Anis Attiaoui](#) (Canada)¹, Simone Assali (Canada)¹, Lu Luo (Canada)¹, Gerard Daligou (Canada)², Mahmoud Atalla (Canada)¹, Sebastien Koelling (Canada)¹, Oussama Moutanabbir (Canada)¹ (1. Department of Engineering Physics, Ecole Polytechnique de Montreal, 2. Department of Engineering Physics,)



| Continued from Tuesday, 12 July | | | |
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| 8:30am | TuE1 - TuE1 - Single Photon Emission & Detection <i>Dorado V</i> Chaired by: Weidong Zhou (United States) | 9:15am | TuF1.2 (Keynote) - Real-time spectroscopic measurement using terahertz parametric generator » <u>Kosuke Murate</u> (Japan) ¹ , Kodo Kawase (Japan) ¹ (1. Nagoya University) |
| 8:30am | TuE1.1 (Invited) - Quantum hardware for the generation, manipulation and detection of light at the single photon level » <u>Val Zwiller</u> (Sweden) ¹ (1. KTH) | 8:30am | TuG1 - TuG1 - Fibres, Amplifiers, and Devices II <i>Las Montañas C</i> Chaired by: Mingming Tan (United Kingdom) |
| 9am | TuE1.2 (Invited) - Development of submegahertz photon pair sources based on fused silica microspheres » <u>Alfred U'Ren</u> (Mexico) ¹ (1. Instituto de Ciencias Nucleares) | 8:30am | TuG1.1 (Invited) - Multi-band WDM Transmission Systems Enabled by Wavelength Conversion » <u>Takeshi Hoshida</u> (Japan) ¹ , Tomoyuki Kato (Japan) ¹ , Tsuyoshi Yamamoto (Japan) ¹ , Yu Tanaka (Japan) ¹ (1. Fujitsu Limited) |
| 9:30am | TuE1.3 - Design of Superconducting-Nanostripe Single-Photon Detectors for Silicon Quantum Photonic Integrated Circuits » Loic Djamen Tchabda (United States) ¹ , Sami Nazib (United States) ¹ , Troy Hutchins-Delgado (United States) ¹ , Erika Sommer (United States) ¹ , Tzu-Ming Lu (United States) ² , Ivan Komissarov (United States) ³ , Roman Sobolewski (United States) ³ , <u>Marek Osinski</u> (United States) ¹ (1. University of New Mexico, 2. Sandia National Laboratories, 3. University of Rochester) | 9am | TuG1.3 (Invited) - All-Optical Signal Processing using Nonlinear Bidirectional Semiconductor Optical Amplifier » <u>Feng Wen</u> (China) ¹ , Fan Sun (China) ¹ , Feng Fan (China) ² , Baojian Wu (China) ¹ , Kun Qiu (China) ¹ (1. University of Electronic Science and Technology of China, 2. Beijing Research Institute of Telemetry) |
| 8:30am | TuF1 - TuF1 - Keynote Talks II <i>Las Montañas B</i> Chaired by: Chiko Otani (Japan) | 9am | TuC1 - TuC1 - SDM Fibers and Devices II <i>Dorado III</i> Chaired by: Roland Ryf (United States) |
| 8:30am | TuF1.1 (Keynote) - Nonlocal Time-Resolved Terahertz Spectroscopy in the Near Field » Angela Pizzuto (United States) ¹ , Enrique Castro-Camus (Germany) ² , William Wilson (United States) ³ , Wonsik Choi (United States) ⁴ , Xiuling Li (United States) ⁴ , <u>Daniel M. Mittleman</u> (United States) ¹ (1. Brown University, 2. University of Marburg, 3. Harvard University, 4. University of Illinois Urbana Champaign) | 9am | TuC1.1 (Invited) - Ultra Low Loss and Low Crosstalk MCF with Standard Cladding Diameter » <u>Masanori Takahashi</u> (Japan) ¹ , Koichi Maeda (Japan) ¹ , Keichi Aiso (Japan) ¹ , Kazunori Mukasa (Japan) ¹ , Daiki Soma (Japan) ² , Hidenori Takahasahi (Japan) ² , Takehiro Tsuritani (Japan) ² , Miranda Mitrovic (Denmark) ³ , Bera Pálsdóttir (Denmark) ³ , Yoshihiro Arashitani (Japan) ¹ (1. Furukawa Electric Co., Ltd., 2. KDDI Research, Inc., 3. OFS FTEL Denmark ApS) |
| | | 9:30am | TuC1.2 (Invited) - Air clad Photonic Lanterns » <u>Neethu Mariam Mathew</u> (Denmark) ¹ , Lars Grüner-Nielsen (Denmark) ² , Michael Galili (Denmark) ¹ , Karsten Rottwitt (Denmark) ¹ (1. Technical University of Denmark, 2. Danish Optical Fiber Innovation) |



| Continued from Tuesday, 12 July | | |
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| 10am | Break <i>Dorado Terrace</i> | |
| 10:30am | TuA2 - TuA2 - Optical Frequency Comb Sources and Applications I <i>Dorado I</i> Chaired by: Mikael Mazur (United States) | |
| 10:30am | TuA2.1 (Invited) - Micro-resonator based optical frequency combs » <u>Kerry Vahala</u> (United States) ¹ (1. T.J. Watson Laboratory of Applied Physics, California Institute of Technology) | 10:30am TuB2.1 (Invited) - Phase and amplitude trimming of photonic integrated circuits using phase change materials » Chuanyu Lian (United States) ¹ , Yi-Siou Huang (United States) ¹ , Hongyi Sun (United States) ¹ , Heshan Yu (United States) ¹ , Cosmin-Constantin Popescu (United States) ² , Tian Gu (United States) ² , Steven Vitale (United States) ³ , Ichiro Takeuchi (United States) ¹ , Juejun (JJ) Hu (United States) ² , <u>Carlos Ríos</u> (United States) ¹ (1. Department of Materials Science & Engineering, University of Maryland, College Park, MD, USA, 2. Department of Materials Science & Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA, 3. Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA, USA) |
| 11am | TuA2.2 (Invited) - Ultra-Precise Time Transfer Over Open Air Paths » <u>Laura Sinclair</u> (United States) ¹ , Emily Caldwell (United States) ¹ , Benjamin Stuhl (United States) ² , William Swann (United States) ¹ , Nathan Newbury (United States) ¹ , Jean-Daniel Deschenes (Canada) ³ (1. National Institute of Standards and Technology, 2. Space Dynamics Laboratory, 3. Octosig Consulting) | 11am TuB2.2 - Thin film photonic resonator weight stacks » <u>Simon Bilodeau</u> (United States) ¹ , Thomas Ferreira de Lima (United States) ¹ , Eli Doris (United States) ¹ , Michael Hack (United States) ² , <u>Paul Prucnal</u> (United States) ¹ (1. Princeton University, 2. Universal Display Corporation) |
| 11:30am | TuA2.3 - Compact and Ultra-Stable Fiber-Photonic Stabilization Methods of Optical Frequency Combs » <u>Jungwon Kim</u> (Korea, Republic of) ¹ , Dohyeon Kwon (Korea, Republic of) ² (1. KAIST, 2. KRISS) | 11:15am TuB2.4 (Invited) - Silicon Photonics Integration for FMCW LiDAR Transmitter » <u>Linjie Zhou</u> (China) ¹ (1. State Key Laboratory of Advanced Optical Communication Systems and Networks Department of Electronic Engineering, Shanghai Jiao Tong University / 2SJTU-Pinghu Institute of Intelligent Optoelectronics) |
| 11:45am | TuA2.4 - Narrow Linewidth Blue Laser Systems » <u>Samira Jastan</u> (Ireland) ¹ , William Whelan-Curtin (Ireland) ¹ , Simone Iadanza (Ireland) ¹ (1. Center of Advanced Photonics and Process Analysis Munster Technological University) | 10:30am TuC2 - TuC2 - SDM Channel Modelling <i>Dorado III</i> Chaired by: Nick Fontaine (United States) |
| 10:30am | TuB2 - TuB2 - Programmable Photonics: Devices II <i>Dorado II</i> Chaired by: Tian Gu (United States) | 10:30am TuC2.1 (Invited) - Role of polarization-mode coupling and polarization-mode dispersion in the crosstalk between cores of uncoupled-core multi-core fibers » <u>Cristian Antonelli</u> (Italy) ¹ (1. University of L'Aquila) |
| | | 11am TuC2.2 (Invited) - Impact of Mode-Dependent Gain on the Capacity of Ultra-Long-Haul SDM Systems » <u>Darli Mello</u> (Brazil) ¹ , Hrishikesh Srinivas (United States) ² , Karthik Choutagunta (United States) ² , Ruby Ospina (Brazil) ¹ , Joseph Kahn (United States) ² (1. University of Campinas, 2. Stanford University) |



Continued from Tuesday, 12 July

11:30am **TuC2.3 (Invited) - The Ergodic Gaussian Noise model for the analysis of strongly coupled space division multiplexing links**

» Paolo Serena (Italy)¹, Chiara Lasagni (Italy)², Alberto Bononi (Italy)¹, Cristian Antonelli (Italy)², Antonio Mecozzi (Italy)² (1. University of Parma, 2. University of l'Aquila)

10:30am **TuD2 -
TuD2 - SIMP V**

Dorado IV

Chaired by: Guo-En Chang (Taiwan)

10:30am **TuD2.1 (Invited) - (Si)GeSn LEDs and photodiodes for gas sensing**

» Alexei Tchelnokov (France)¹, Clement Cardoux (France)², Lara Casiez (France)², Nicolas Pauc (France)³, Vincent Calvo (France)³, Philippe Rodriguez (France)², Nicolas Coudurier (France)², Marvin Frauenrath (France)², Jean-Michel Hartmann (France)², Vincent Reboud (France)² (1. CEA, 2. Univ. Grenoble Alpes, CEA, LETI, F-38054 Grenoble, France, 3. Univ. Grenoble Alpes, CEA, IRIG-DePhy, F-38054 Grenoble, France)

11am **TuD2.2 (Invited) - Electrically pumped SiGeSn microring lasers**

» Bahareh Marzban (Germany)¹, Lukas Seidel (Germany)², Teren Liu (Germany)³, Vivien kiyek (Germany)³, Kui Wu (Germany)⁴, Marvin Zöllner (Germany)⁵, Zoran Ikonc (United Kingdom)⁶, Jörg Schulze (Germany)⁷, Detlev Grützmacher (Germany)⁸, Giovanni Capellini (Germany)⁹, Michael Oehme (Germany)¹⁰, Jeremy Witzens (Germany)¹, Dan Buca (Germany)¹¹ (1. RWTH Aachen, 2. IHT University Stuttgart, 3. Forschungszentrum Jülich, 4. IPH RWTH Aachen, 5. IHP, 6. University of leeds, 7. IHT Universty Stuttgart, 8. PGI-9, Forschungszentrum Juelich, 9. IHP-Leibniz-Institut für innovative Mikroelektronik, 10. University of Stuttgart, 11. FZJ)

10:30am **TuF2 -
TuF2 - Advanced THz Imaging Techniques II**

Las Montañas B

Chaired by: Chiko Otani (Japan)

10:30am

TuF2.1 (Invited) - Localization in Wireless Terahertz Communications: An Imaging Problem and A Spectral Encoding Solution

» Hichem Guerboukha (United States)¹, Maksim Skorobogatiy (Canada)², Daniel M. Mittleman (United States)¹ (1. Brown University, 2. Department of Engineering Physics, Polytechnique Montreal Montreal, Canada)

11am

TuF2.2 (Invited) - Fabrication and Characterization of High Permittivity Solid Immersion Lenses for Terahertz Microscopy

» Quentin Chapdelaine (Canada)¹, Kathirvel Nallappan (Canada)¹, Yang Cao (Canada)¹, Hichem Guerboukha (United States)², Nikita Chernomyrdin (Russian Federation)³, Kirill Zaytsev (Russian Federation)⁴, Maksim Skorobogatiy (Canada)⁵, Guofu Xu (Canada)⁶ (1. Ecole Polytechnique de Montreal, 2. Brown University, 3. Prokhorov General Physics Institute of the Russian Academy of Sciences, 4. Prokhorov General Physics Institute of RAS, 5. Department of Engineering Physics, Polytechnique Montreal Montreal, Canada, 6. Polytechnique Montréal, Engineering Physics)

11:30am

TuF2.3 (Invited) - Generalized Talbot Self-Healing of Periodic Images

» Connor Rowe (Canada)¹, Luis Romero Cortés (Spain)², Mohamed Seghilani (United States)³, Hugues Guillet de Chatellus (France)⁴, José Azaña (Canada)¹ (1. Institut National de la Recherche Scientifique (INRS), 2. Universidad Politécnica de Valencia, 3. Argo AI, 4. Université Grenoble Alpes)

10:30am **TuG2 -
TuG2 - Transmission Systems I**

Las Montañas C

Chaired by: Pratim Hazarika (United Kingdom)



Continued from Tuesday, 12 July

- 10:30am **TuG2.1 (Invited) - Narrow-Linewidth Micro-Transfer-Printed III-V-on-Si Laser with 110 nm Tuning Range**
 » Emadreza Soltanian (Belgium)¹, Grigorij Muliuk (Belgium)², Sarah Uvin (Belgium)³, Dongbo Wang (Belgium)¹, Guy Lepage (Belgium)², Peter Verheyen (Belgium)², Joris Van Campenhout (Belgium)², Stefan Ertl (Austria)⁴, Johanna Rimböck (Austria)⁴, Nicolas Vaissiere (France)⁵, Delphine Néel (France)⁵, Joan Ramirez (France)⁵, Jean Decobert (France)⁵, Bart Kuyken (Belgium)¹, Jing Zhang (Belgium)¹, Gunther Roelkens (Belgium)¹ (1. Ghent University - imec, 2. IMEC, 3. Brolis Sensor Technology BV, 4. EV Group GmbH, 5. III-V Lab)
- 11am **TuG2.2 (Invited) - Generation of programmable optical frequency combs for flexible-bandwidth optical transmitters**
 » Chester Shu (Hong Kong)¹, Yuanfei Zhang (Hong Kong)¹, Honghui Zhang (Hong Kong)¹ (1. The Chinese University of Hong Kong)
- 11:30am **TuG2.3 (Invited) - Ultra-Wide Band WDM Transmission System**
 » Feng Tian (China)¹ (1. Beijing University of Posts and Telecommunications (BUPT))
- 12pm **Lunch - On Own**
- 1:30pm **TuA3 -
TuA3 - Optical Frequency Comb Sources and Applications II**
Dorado I
 Chaired by: Radan Slavik (United Kingdom)
- 1:30pm **TuA3.1 (Invited) - Free Range Frequency Combs: mobilizing frequency comb laser technology from hypersonic research to atmospheric sensing**
 » Greg Rieker (United States)¹ (1. University of Colorado Boulder)
- 2pm **TuA3.3 - Electro-optic frequency combs for the rapid interrogation of cavity optomechanical sensors**
 » David Long (United States)¹, Benjamin Reschovsky (United States)¹, Jasper Stroud (United States)¹, David Plusquellic (United States)¹, Thomas LeBrun (United States)¹, Jason Gorman (United States)¹ (1. National Institute of Standards and Technology)

- 2:15pm **TuA3.4 - Impact of random structural perturbations on Hollow-Core Anti-Resonant Fibers**
 » Michael Petry (United States)¹, Md Selim Habib (United States)¹ (1. Florida Polytechnic University)
- 1:30pm **TuC3 -
TuC3 - Focus Session: SDM Research in Germany**
Dorado III
 Chaired by: Haoshuo Chen (United States)
- 1:30pm **TuC3.1 (Invited) - Performance Requirements for Optical Frequency Comb Generators as Optical Power Supplies in Coherent SDM/DWDM Links**
 » Christoph Füllner (Germany)¹, Olaf Dünkel (Germany)¹, Pablo Marin-Palomo (Belgium)¹, Juned Kemal (Germany)¹, Wolfgang Freude (Germany)¹, Christian Koos (Germany)¹, Sebastian Randel (Germany)¹ (1. Karlsruhe Institute of Technology)
- 2pm **TuC3.2 (Invited) - Novel concepts for multi-core fibers and amplifiers**
 » Thomas Schreiber (Germany)¹, Stefan Kuhn (Germany)¹, Johannes Nold (Germany)¹, Christian Hupel (Germany)¹, Sigrun Hein (Germany)¹, Steffen Schulze (Germany)¹, Benjamin Yildiz (Germany)¹, Denny Häßner (Germany)¹, Maximilian Strecker (Germany)¹, Arno Klenke (Germany)², Christopher Aleshire (Germany)², Albrecht Steinkopf (Germany)², Cesar Jauregui (Germany)², Jens Limpert (Germany)¹, Till Walbaum (Germany)¹, Nicoletta Haarlammer (Germany)¹ (1. Fraunhofer IOF Jena, 2. Institute of Applied Physics, FSU Jena)
- 2:30pm **TuC3.3 (Invited) - Building Blocks for Making Space Division Multiplexing a Reality**
 » Tobias Fehenberger (Germany)¹ (1. ADVA)
- 1:30pm **TuD3 -
TuD3 - SIMP VI**
Dorado IV
 Chaired by: Oussama Moutanabbir (Canada)



Continued from Tuesday, 12 July

- 1:30pm **TuD3.1 (Invited) - Thin Sn films on Ge: From 2D to 3D growth**
» Inga Fischer (Germany)¹, Giovanni Capellini (Germany)² (1. Brandenburgische Technische Universität Cottbus-Senftenberg, 2. IHP-Leibniz-Institut für innovative Mikroelektronik)
- 2pm **TuD3.2 (Invited) - GeSn PIN photodetectors for high bandwidth e-SWIR applications**
» Mahmoud Atalla (Canada)¹, Simone Assali (Canada)¹, Anis Attiaoui (Canada)¹, Gerard Daligou (Canada)², Cedric Lemieux-Leduc (Canada)³, Lu Luo (Canada)¹, Oussama Moutanabbir (Canada)¹ (1. Department of Engineering Physics, Ecole Polytechnique de Montreal, 2. Department of Engineering Physics,, 3. Polytechnique Montréal)
- 2:30pm **TuD3.3 - Hexagonal SiGe as a direct-gap semiconductor**
» Christopher Broderick (United States)¹ (1. University of California, Santa Barbara)
- 2:45pm **TuD3.4 - Modeling of lasing threshold in GeSn waveguides**
» Jay Mathews (United States)¹, Zairui Li (United States)² (1. University of Dayton, 2. Morehouse College)

1:30pm **TuE3 -
TuE3 - Topological Lasers & VCSEL**
Dorado V
Chaired by: David Burghoff (United States)

- 1:30pm **TuE3.1 (Keynote) - Topological Insulator Lasers and VCSELs**
» Mordechai (Moti) Segev (Israel)¹, Alex Dikopoltsev (Israel)¹ (1. TECHNION - Israel Institute of Technology)
- 2:15pm **TuE3.4 (Invited) - Development of sub-kHz visible VECSELs for application in a strontium clock**
» Jennifer Hastie (United Kingdom)¹ (1. University of Strathclyde)

1:30pm **TuF3 -
TuF3 - THz Photonics and Optoelectronics I**
Las Montañas B
Chaired by: Guofu Xu (Canada)

1:30pm **TuF3.3 (Invited) - Terahertz Kerr microscopy using a SrTiO3 sensor**
» Francois Blanchard (Canada)¹, Joel E Nneck (Canada)¹, Sohel Zibod (Canada)², Ksenia Dolgaleva (Canada)², Takashi Arikawa (Japan)³, Koichiro Tanaka (Japan)³ (1. École de technologie supérieure, 2. Ottawa University, 3. Kyoto University)

1:30pm **TuG3 -
TuG3 - Transmission Systems II**
Las Montañas C
Chaired by: Pratim Hazarika (United Kingdom)

1:30pm **TuG3.1 (Invited) - S, C and L-band transmission in single and Multi-core fibers**
» Ben Puttnam (Japan)¹, Ruben Luis (Japan)¹, Georg Rademacher (Japan)¹, Yoshinari Awaji (Japan)¹, Hideaki Furukawa (Japan)¹ (1. National Institute of Information and Communications Technology)

2pm **TuG3.2 (Invited) - Link Tomography for intelligent monitoring of optical multiband systems**
» Matheus Ribeiro Sena (Germany)¹, Robert Emmerich (Germany)¹, Behnam Shariati (Germany)¹, Johannes Fischer (Germany)¹ (1. Fraunhofer Heinrich Hertz Institute)

2:30pm **TuG3.3 - Hybrid Raman Amplifier for E, S, C and L band Signal Amplification**
» Pratim Hazarika (United Kingdom)¹, Mingming Tan (United Kingdom)¹, Wladek Forysiak (United Kingdom)¹ (1. Aston Institute of Photonic Technologies, Aston University, Birmingham)



Continued from Tuesday, 12 July

- 2:45pm **TuG3.4 - Broadband Transmission Investigation on the 6-Mode-7-Core Space-Division Multiplexing System**
» [Tianfeng Zhao](#) (China)¹, Feng Wen (China)¹, Baojian Wu (China)¹, Mingming Tan (United Kingdom)², Bo Xu (China)¹, Kun Qiu (China)¹ (1. University of Electronic Science and Technology of China, 2. Aston Institute of Photonic Technologies, Aston University, Birmingham)
- 3pm **Break**
Dorado Terrace
- 3:30pm **TuA4 -
TuA4 - Novel Sources, Synchronization and Sensing**
Dorado I
Chaired by: Nick Fontaine (United States)
- 3:30pm **TuA4.1 (Invited) - Metrology prospects of Hollow-core optical fibers**
» [Eric Numkam Fokoua](#) (United Kingdom)¹, Meng Ding (United Kingdom)², Zitong Feng (United Kingdom)², Bo Shi (United Kingdom)², Francesco Poletti (United Kingdom)², David Richardson (United Kingdom)², Radan Slavik (United Kingdom)² (1. University of Southampton, UK, 2. University of Southampton)
- 4pm **TuA4.2 (Invited) - Novel fiber transmission techniques of femtosecond laser pulses for frequency and timing applications**
» [Kemal Shafak](#) (Germany)¹ (1. Cycle GmbH)
- 4:30pm **TuA4.3 (Invited) - Narrow-linewidth lasers and its frequency control technology**
» [Fang Wei](#) (China)¹, Qingshuai Su (China)¹, Chen Chen (China)¹, Fei Yang (China)¹, Kang Ying (China)¹, Dijun Chen (China)¹, Qing Ye (China)¹, Haiwen Cai (China)¹, Yanguang Sun (China)¹ (1. Shanghai Institute of Optics and Fine Mechanics)

- 3:30pm **TuC4 -
TuC4 - SDM Transmission and Integration**
Dorado III
Chaired by: Tobias Fehenberger (Germany)
- 3:30pm **TuC4.1 (Invited) - High order mode division multiplexing on silicon platform**
» [Yikai Su](#) (China)¹ (1. Shanghai Jiao Tong University)
- 4pm **TuC4.2 (Invited) - DSP-Enhanced Space Division Multiplexing Self-Homodyne Coherent Transmission**
» [Hanzi Huang](#) (China)¹, Haoshuo Chen (United States)², Yetian Huang (China)¹, Qianwu Zhang (China)¹, Jian Chen (China)¹, Nick Fontaine (United States)², Mikael Mazur (United States)², Roland Ryf (United States)², Yingxiong Song (China)¹ (1. Shanghai University, 2. Nokia Bell Labs)
- 3:30pm **TuD4 -
TuD4 - SIMP VII**
Dorado IV
Chaired by: Oussama Moutanabbir (Canada) and Guo-En Chang (Taiwan)
- 3:30pm **TuD4.1 (Invited) - Group IV materials: an intriguing platform for opto-spintronics**
» [Fabio Pezzoli](#) (Italy)¹ (1. University of Milano-Bicocca)
- 4pm **TuD4.2 - Radiative Carrier Lifetime in GeSn Mid-Infrared Emitters**
» [Gerard Daligou](#) (Canada)¹, Simone Assali (Canada)¹, Anis Attiaoui (Canada)¹, Etienne Bouthillier (Canada)¹, Oussama Moutanabbir (Canada)¹ (1. Department of Engineering Physics, Ecole Polytechnique de Montreal)
- 3:30pm **TuE4 -
TuE4 - Applications of Quantum Technologies I**
Dorado V
Chaired by: Volker Sorger (United States)



Continued from Tuesday, 12 July

3:30pm **TuE4.1 (Invited) - Measuring the Earth Rotation Using an On-chip Brillouin Laser Gyroscope**

» [Kerry Vahala](#) (United States)¹ (1. T.J. Watson Laboratory of Applied Physics, California Institute of Technology)

4pm **TuE4.3 (Invited) - CV-QKD: current status and future perspectives**

» [Matteo Schiavon](#) (France)¹, Yoann Piétri (France)¹, Luis Trigo Vidarte (Spain)², Damien Fruleux (France)¹, Baptiste Gourand (France)³, Valentina Marulanda Acosta (France)⁴, Daniele Dequal (Italy)⁵, Caroline Lim (France)⁶, Jean-Marc Conan (France)⁴, Amine Rhouni (France)¹, Philippe Grangier (France)⁷, Eleni Diamanti (France)¹ (1. LIP6, Sorbonne University, 2. ICFO, 3. iXblue, 4. ONERA, 5. ASI, 6. Paris observatory, 7. Institut d'optique)

Wednesday, 13 July

8:30am **WA1 - WA1 - Stable Laser Sources and Technologies I**

Dorado I

Chaired by: Frank Quinlan (United States)

8:30am **WA1.1 (Invited) - Scalable fabrication of ultrahigh-finesse micromirrors for precision time-keeping applications**

» [Peter Rakich](#) (United States)¹, Naijun Jin (United States)¹, Charles McLemore (United States)², David Mason (United States)¹, James Hendrie (United States)³, Yizhi Luo (United States)⁴, Megan Kelleher (United States)⁵, prashanta Kharel (United States)⁴, Franklyn Quinlan (United States)⁶, Scott Diddams (United States)⁶ (1. Department of Applied Physics, Yale University, 2. University of Colorado Boulder, 3. National Institute of Standards and Technology, Boulder, CO 80305, 4. Department of Applied Physics, Yale University, New Haven, CT 06520, 5. Department of Physics, University of Colorado Boulder, 6. National Institute of Standards and Technology)

9am **WA1.2 (Invited) - Photonic Integrated stabilized lasers and application to atomic and communications systems**

» [Daniel Blumenthal](#) (United States)¹ (1. University of California Santa Barbara, Department of Electrical and Computer Engineering)

9:30am **WA1.3 - Stabilization of an integrated laser with an 8 mL Fabry-Pérot optical reference cavity**

» [Charles McLemore](#) (United States)¹, Joel Guo (United States)², Naijun Jin (United States)³, Chao Xiang (United States)², Dahyeon Lee (United States)¹, Lue Wu (United States)⁴, Warren Jin (United States)², Megan Kelleher (United States)¹, David Mason (United States)³, Lin Chang (United States)², Avi Feshali (United States)⁵, Mario Paniccia (United States)⁵, Peter Rakich (United States)³, Kerry Vahala (United States)⁴, Scott Diddams (United States)⁶, John Bowers (United States)², Franklyn Quinlan (United States)⁶ (1. Department of Physics, University of Colorado Boulder, 2. Department of Electrical and Computer Engineering, University of California Santa Barbara, 3. Department of Applied Physics, Yale University, 4. T.J. Watson Laboratory of Applied Physics, California Institute of Technology, 5. Anello Photonics, 6. National Institute of Standards and Technology)

8:30am **WB1 - WB1 - Programmable Photonics: Systems and Architectures III**

Dorado II

Chaired by: Tian Gu (United States)

8:30am **WB1.2 (Invited) - Automatic Testing of a Silicon Photonic Reconfigurable Add/Drop Multiplexer**

» [Matteo Petrini](#) (Italy)¹, Rita Baldi (Italy)¹, Francesco Morichetti (Italy)¹, Andrea Melloni (Italy)¹ (1. Politecnico di Milano)

9am **WB1.3 - Software Framework Architecture for Programmable Photonic Chips**

» Iman Zand (Belgium)¹, Cleitus Antony (Ireland)², [Xiangfeng Chen](#) (Belgium)³, Wim Bogaerts (Belgium)⁴ (1. Ghent University - imec, 2. Tyndall National Institute, 3. UGENT-IMEC, 4. Gent University)

9:15am **WB1.4 - An Algorithm for Reconfigurable Coupled Resonator Optical Waveguides**

» [Xiangfeng Chen](#) (Belgium)¹, Wim Bogaerts (Belgium)² (1. UGENT-IMEC, 2. Gent University)



Continued from **Wednesday, 13 July**

9:30am **WB1.5 - Multi-Channel Free-Space Optics Receiver Enabled by a Programmable Photonic Processor**
 » Seyed Mohammad Seyedin Navadeh (Italy)¹, Mazyar Milanizadeh (Italy)¹, Francesco Zanetto (Italy)¹, Vittorio Grimaldi (Italy)¹, Christian De Vita (Italy)¹, Charalambos Klitis (United Kingdom)², Marc Sorel (United Kingdom)³, Giorgio Ferrari (Italy)¹, David A.B. Miller (United States)⁴, Andrea Melloni (Italy)¹, Francesco Morichetti (Italy)¹ (1. Politecnico di Milano, 2. University of Glasgow, 3. University of Glasgow / TeCIP Institute, Scuola Superiore Sant'Anna, 56124 Pisa - Italy, 4. Stanford University)

8:30am **WC1 - WC1 - EXAT / SDM Fibers**
Dorado III
 Chaired by: Mikael Mazur (United States)

8:30am **WC1.1 (Invited) - Overview of randomly-coupled multicore fiber technologies**
 » Tetsuya Hayashi (Japan)¹ (1. Sumitomo Electric Industries, Ltd.)

9am **WC1.2 (Invited) - Dynamic linear mode coupling effects in multi mode fibers for mode division multiplexed transmission**
 » Peter Krummrich (Germany)¹, Christian Spenner (Germany)¹, Klaus Petermann (Germany)² (1. TU Dortmund, 2. TU Berlin)

9:30am **WC1.3 (Invited) - SDM in modern undersea systems**
 » Oleg Sinkin (United States)¹ (1. SubCom)

10am **WC1.4 (Invited) - Transmission Demonstrations Using Space-Division-Multiplexing**
 » Ben Puttnam (Japan)¹, Georg Rademacher (Japan)¹, Ruben Luis (Japan)¹ (1. National Institute of Information and Communications Technology)

8:30am **WE1 - WE1 - Semiconductor Quantum Light Sources**
Dorado V
 Chaired by: Mordechai (Moti) Segev (Israel)

8:30am **WE1.1 (Invited) - Semiconductor quantum dots as resource for photonic quantum technologies**
 » Sven Hoenfing (Germany)¹ (1. Universität Wuerzburg)

9am **WE1.2 (Invited) - Deterministically fabricated quantum light sources for applications in photonic quantum technologies**
 » Stephan Reitzenstein (Germany)¹ (1. Technische Universität Berlin)

9:30am **WE1.3 (Invited) - Quantum noise and squeezing in semiconductor nanolasers and nanoLEDs**
 » Marco Saldutti (Denmark)¹, Kresten Yvind (Denmark)¹, Jesper Mørk (Denmark)¹ (1. Technical University of Denmark)

10am **WE1.4 (Invited) - Light Sources for Quantum IT and Photonic Integrated Circuits**
 » Volker Sorger (United States)¹ (1. George Washington University)

8:30am **WF1 - WF1 - Keynote Talks IV**
Las Montañas B
 Chaired by: Marco Peccianti (United Kingdom)

8:30am **WF1.1 (Keynote) - Potential and prospects of terahertz technology for the food applications**
 » Chiko Otani (Japan)¹, Chao-hui Feng (Japan)² (1. RIKEN (Institute of Physical and Chemical Research), 2. Kitami Institute of Technology)

9:15am **WF1.2 (Keynote) - Past, Present, and Future of LTEM: Laser Terahertz Emission Microscope**
 » Masayoshi Tonouchi (Japan)¹ (1. Osaka University)



| Continued from Wednesday, 13 July | |
|-----------------------------------|--|
| 8:30am | WG1 - WG1 - Fibres, Amplifiers, and Devices III <i>Las Montañas C</i> Chaired by: Mingming Tan (United Kingdom) |
| 8:30am | WG1.1 (Invited) - Bismuth-doped fiber amplifiers (BDFA) for O-band data transmission » Vitaly Mikhailov (United States) ¹ , Jiawei Luo (United States) ¹ , Daryl Inniss (United States) ¹ , Man Yan (United States) ¹ , Yingzhi Sun (United States) ¹ , Gabriel Puc (United States) ¹ , Robert Windeler (United States) ¹ , Paul Westbrook (United States) ¹ , Yuriy Dulashko (United States) ¹ , David DiGiovanni (United States) ¹ (1. OFS Laboratories) |
| 9am | WG1.2 (Invited) - Ultra-wide band polarization insensitive photonic integrated filters and switches » Yu Wang (Netherlands) ¹ , Rafael Magalhães (Netherlands) ¹ , Nicola Calabretta (Netherlands) ¹ (1. IPI-ECO Research Institute, Eindhoven University of Technology) |
| 9:30am | WG1.3 - Novel design and operation of photonic-integrated WSS for Ultra-wideband applications » Lorenzo Tunesi (Italy) ¹ , Ihtesham Khan (Italy) ¹ , Muhammad Umar Masood (Italy) ¹ , Enrico Ghillino (United States) ² , Andrea Carena (Italy) ¹ , Vittorio Curri (Italy) ¹ , Paolo Bardella (Italy) ¹ (1. politecnico di Torino, 2. synopsis) |
| 9:45am | WG1.4 - Performance Analysis of Novel Multi-band Photonic-integrated WSS Operated on 400ZR » Ihtesham Khan (Italy) ¹ , Lorenzo Tunesi (Italy) ¹ , Muhammad Umar Masood (Italy) ¹ , Enrico Ghillino (United States) ² , Andrea Carena (Italy) ¹ , Paolo Bardella (Italy) ¹ , Vittorio Curri (Italy) ¹ (1. politecnico di Torino, 2. synopsis) |
| 10am | Break <i>Dorado Terrace</i> |
| 10:30am | WA2 - WA2 - Stable Laser Sources and Technologies II <i>Dorado I</i> Chaired by: Franklyn Quinlan (United States) |
| 10:30am | WA2.1 (Invited) - Narrow Linewidth Semiconductor Lasers from Visible to Infrared Wavelengths » John Bowers (United States) ¹ (1. UCSB) |
| 11am | WA2.2 (Invited) - Ultra-stable lasers for laboratory and field applications » Josue Davila-Rodriguez (United States) ¹ (1. Stable Laser Systems) |
| 10:30am | WF2 - WF2 - THz Bio and Chemical Imaging II <i>Las Montañas B</i> Chaired by: Marco Peccianti (United Kingdom) |
| 10:30am | WF2.2 (Invited) - Cell Demethylation using Terahertz Radiation for Potential Cancer Therapy » Joo-Hiuk Son (Korea, Republic of) ¹ , Hee Jun Shin (Korea, Republic of) ² (1. University of Seoul, 2. Pohang Accelerator Laboratory (PAL)) |
| 11am | WF2.3 (Invited) - High-sensitivity probing of aqueous samples using the terahertz chemical microscope » Tsuneyuki Ozaki (Canada) ¹ (1. INRS-EMT) |
| 10:30am | WG2 - WG2 - System Modelling and Optical Networking III <i>Las Montañas C</i> Chaired by: Wlodek Forysiak (United Kingdom) |



Continued from Wednesday, 13 July

- 10:30am **WG2.1 (Invited) - Achievable Information Rates in C-band Nonlinear Coherent Optical Communication Systems**
» [Tianhua Xu](#) (United Kingdom)¹, Mupeng Li (China)², Nikita Shevchenko (United Kingdom)³, Mingming Tan (United Kingdom)⁴, Wenxiu Hu (United Kingdom)¹, Zhe Li (United States)⁵, Tiegeng Liu (China)² (1. University of Warwick, 2. Tianjin University, 3. University of Cambridge, 4. Aston Institute of Photonic Technologies, Aston University, Birmingham, 5. Cisco Systems)
- 11am **WG2.2 - QoT-Estimation Assisted by Transfer learning in Extended C-band Network Operating on 400ZR**
» Fehmida Usmani (Pakistan)¹, [Ihtesham Khan](#) (Italy)², Muhammad Umar Masood (Italy)², arsalan ahmad (Pakistan)¹, Muhammad Shahzad (Pakistan)¹, Vittorio Curri (Italy)² (1. National University of Sciences and Technology, 2. politecnico di Torino)
- 11:15am **WG2.3 - C+L-Band Dispersion Compensation through Optical Reservoir Scheme**
» [Yinke Yang](#) (China)¹, Feng Wen (China)¹, Feng Yang (China)², Baojian Wu (China)¹, Kun Qiu (China)¹ (1. University of Electronic Science and Technology of China, 2. Marolabs Co., Ltd.)
- 11:30am **WG2.4 - Physics-Informed Neural Network Modeling of Soliton Pulses in Optical Communication Systems**
» [Joshua Uduagbomen](#) (United Kingdom)¹, Subhash Lakshminarayana (United Kingdom)¹, Mark Leeson (United Kingdom)¹, Tianhua Xu (United Kingdom)¹ (1. University of Warwick)
- 10:45am **WC2 -
WC2 - SDM Modes**
Dorado III
Chaired by: Ruben Luis (Japan)
- 10:45am **WC2.1 (Invited) - Multi-mode optical pulse shaping**
» [Mikael Mazur](#) (United States)¹, Nick Fontaine (United States)¹, Haoshuo Chen (United States)², Roland Ryf (United States)¹, David T. Neilson (United States)¹ (1. Nokia Bell Labs, 2. Nokia)

- 11:15am **WC2.2 (Invited) - Arbitrary vector spatiotemporal light field generation**
» Mickael Mounaix (Australia)¹, [Nick Fontaine](#) (United States)², David T. Neilson (United States)², Roland Ryf (United States)², Haoshuo Chen (United States)³, Juan Carlos Alvarado (United States)⁴, Joel Carpenter (Australia)¹ (1. The University of Queensland, 2. Nokia Bell Labs, 3. Nokia, 4. University of Central Florida)
- 11:45am **WC2.3 (Invited) - Topological guidance: a new form of light transport for scaling fiber modal capacity**
» Zelin Ma (United States)¹, [Siddharth Ramachandran](#) (United States)² (1. Bos, 2. Boston University)
- 11am **WE2 -
WE2 - Applications of Quantum Technologies II**
Dorado V
Chaired by: Alfred U'Ren (Mexico)
- 11am **WE2.1 (Invited) - Plasma-Free Highly-Anisotropic Etching of Compound Semiconductors for Optoelectronic Applications**
» [Xiuling Li](#) (United States)¹ (1. The University of Texas at Austin)
- 11:30am **WE2.3 (Invited) - Scaling of photonic crystal surface emitting lasers**
» [Weidong Zhou](#) (United States)¹ (1. University of Texas at Arlington)
- 12pm **Lunch - On Own**
- 1:30pm **WA3 -
WA3 - Distributed Fiber Sensing I**
Dorado I
Chaired by: Radan Slavik (United Kingdom)
- 1:30pm **WA3.1 (Invited) - Using Existing Fiber Networks for Environmental Sensing**
» [Ezra Ip](#) (United States)¹, Yue-Kai Huang (United States)¹, Ming-Fang Huang (United States)¹, Ting Wang (United States)¹ (1. NEC Laboratories America)



Continued from Wednesday, 13 July

2pm

WA3.2 (Invited) - Ultra-stable interferometry for geophysical sensing on a global scale

» Giuseppe Marra (United Kingdom)¹ (1. National Physical Laboratory)

1:30pm

**WF3 -
WF3 - THz Photonics and Optoelectronics II**

Las Montañas B

Chaired by: Guofu Xu (Canada)

1:30pm

WF3.1 (Invited) - Recent Advances of Grating-Gate Transistors for Fast, Sensitive, Room-Temperature Plasmonic Terahertz Detection

» AKIRA SATOU (Japan)¹, Taiichi Otsuji (Japan)² (1. Tohoku University, 2. Tohoku)

2pm

WF3.2 (Invited) - Optical-to-THz switches for pulse THz generation and detection

» Dmitry Ponomarev (Russian Federation)¹, Kirill Zaytsev (Russian Federation)², Maksim Skorobogatiy (Canada)³, Rustam Khabibullin (Russian Federation)¹, Igor Glinskiy (Russian Federation)¹, Taiichi Otsuji (Japan)⁴ (1. V.G. Mokerov Institute of Ultra High Frequency Semiconductor Electronics of RAS, 2. Prokhorov General Physics Institute of RAS, 3. Department of Engineering Physics, Polytechnique Montreal Montreal, Canada, 4. Research Institute of Electrical Communication, Tohoku University)

2:30pm

WF3.3 - Optoelectronic properties of nanotubes based on tungsten disulfide

» Maksim Paukov (Russian Federation)¹, Anastasia Goldt (Russian Federation)², Gennadiy Komandin (Russian Federation)³, Alexander Syuy (Russian Federation)¹, Dmitriy Yakubovskiy (Russian Federation)¹, Sergei Novikov (Russian Federation)¹, Alexander Polyakov (Sweden)⁴, Reshef Tenne (Israel)⁵, Alla Zak (Israel)⁶, Albert Nasibulin (Russian Federation)², Aleksei Arsenin (Russian Federation)¹, Valentyn Volkov (Russian Federation)¹, Maria Burdanova (Russian Federation)¹ (1. Center for Photonics and 2D Materials, Moscow Institute of Physics and Technology, 2. Skolkovo Institute of Science and Technology, 3. Prokhorov Institute of General Physics RAS, 4. Department of Physics, Chalmers University of Technology, 5. Department of Molecular Chemistry and Materials Science, Weizmann Institute of Science, 6. Holon Institute of Technology)

2:45pm

WF3.4 (Invited) - Broadband optical and terahertz properties of 1D van der Waals heteronanotubes

» Maria Burdanova (Russian Federation)¹, Yongjia Zheng (Japan)², Maksim Paukov (Russian Federation)¹, Georgy Ermolaev (Russian Federation)¹, Gennady Komandin (Russian Federation)³, Davit Ghazaryan (Russian Federation)¹, Sergey Novikov (Russian Federation)¹, Rong Xiang (Japan)⁴, Shohei Chiashi (Japan)⁴, Shigeo Maruyama (Japan)⁴, James Lloyd-Hughes (United Kingdom)⁵, Aleksei Arsenin (Russian Federation)¹, Valentyn Volkov (Russian Federation)¹ (1. Center for Photonics and 2D Materials, Moscow Institute of Physics and Technology, 2. Department of Mechanical Engineering The University of Tokyo, 3. Prokhorov General Physics Institute of the Russian Academy of Sciences, 4. Department of Mechanical Engineering, The University of Tokyo, 5. University of Warwick, Department of Physics)

3pm

Break

Dorado Terrace

3:30pm

**WA4 -
WA4 - Distributed Fiber Sensing II**

Dorado I

Chaired by: Nick Fontaine (United States)



Continued from **Wednesday, 13 July**

3:30pm **WA4.1 (Invited) - Ultrastable Frequency and Timing for Future Telecom Networks**

» Andrew Lord (United Kingdom)¹, Lakshmi Rajagopal (United Kingdom)¹, Marco Menchetti (United Kingdom)¹ (1. BT Applied Research, BT)

4pm **WA4.2 (Invited) - Cavity-less frequency comb for optical-assisted signal processing**

» Zhixin Liu (United Kingdom)¹ (1. UCL, London)

4:30pm **WA4.3 (Invited) - Using Fiber Network to Realize Synchronization, Timekeeping and Vibration Sensing**

» Bo Wang (China)¹, Fangmin Wang (China)¹, Guan Wang (China)¹, Zhongwang Pang (China)¹, Bohan Zhang (China)¹ (1. Tsinghua University)

5pm **PSF - Wrap-Up**

Dorado I

Chaired by: Nick Fontaine (United States)