



# International Symposium on Physics and Applications of Laser Dynamics 2019

20-22 November 2019  
Metz (France)




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## Conference Program

Wednesday, November 20, 2019

Time	Event
08:30 - 09:00	<b>Registration and welcome coffee</b>
09:00 - 09:15	<b>Opening remarks</b> <i>Marc Sciamanna, CentraleSupélec</i> <i>Frédéric Grillot, Télécom ParisTech</i>
09:15 - 10:45	<b>Session 1 - Optical feedback</b> <b>chaired by Frédéric Grillot, Télécom ParisTech</b>
09:15 - 09:45	<b>title to be defined (invited)</b> <i>Sze-Chun Chan</i> <i>City University of Hong-Kong</i>
09:45 - 10:05	<b>Phase-locking and delay-induced instabilities in a dual-frequency fiber laser</b> <i>Marie Guionie<sup>1</sup>, Aurélien Thorette<sup>1</sup>, Marco Romanelli<sup>1</sup>, Anthony Carré<sup>1</sup>, Goulc'hen Loas<sup>1</sup>, Emmanuel Pinsard<sup>2</sup>, Laurent Lablonde<sup>2</sup>, Benoit Cadier<sup>2</sup>, Mehdi Alouini<sup>1</sup>, Marc Vallet<sup>1</sup>, Marc Brunel<sup>1</sup></i> 1) Université de Rennes I, CNRS, FOTON UMR-6082, France 2) iXblue Photonics, France
10:05 - 10:25	<b>Frequency stabilization of a quantum cascade laser using strong optical feedback</b> <i>Bin-Bin Zhao, Xing-Guang Wang, Cheng Wang</i> <i>ShanghaiTech University, China</i>
10:25 - 10:45	<b>Emergence of Oscillation Bursts in Two-State Quantum-Dot Lasers</b> <i>Stefan Meinecke, Jan Hausen, Kathy Lüdge</i> <i>Institut für Theoretische Physik, Technische Universität Berlin, Germany</i>
10:45 - 11:15	<b>Coffee break</b>
11:15 - 12:25	<b>Session 2 - VCSELs</b> <b>chaired by Marc Sciamanna, CentraleSupélec</b>
11:15 - 11:45	<b>Ultrafast spin-VCSELs (invited)</b> <i>Martin Hoffmann</i> <i>Ruhr-Universität Bochum, Germany</i>
11:45 - 12:05	<b>Neuromorphic Spiking Dynamics in VCSELs</b> <i>Joshua Robertson, Matěj Hejda, Julián Bueno, Antonio Hurtado</i> <i>Institute of Photonics, University of Strathclyde, Scotland, UK</i>
12:05 - 12:25	<b>Temporal Localized Structures in mode-locked Vertical External-Cavity Surface-Emitting Lasers</b> <i>A. Bartolo<sup>1</sup>, P. Camelin<sup>1</sup>, C. Schelte<sup>2,3</sup>, A. Verschelde<sup>1</sup>, A. Garnache<sup>4</sup>, G. Beaudoin<sup>5</sup>, I. Sagnes<sup>5</sup>, G. Huyet<sup>1</sup>, M. Marconi<sup>1</sup>, J. Javaloyes<sup>2</sup>, S. V. Gurevich<sup>2,3</sup>, M. Giudici<sup>1</sup></i> 1) Université Côte d'Azur, CNRS, Institut de Physique de Nice UMR 7010, France 2) Universitat de les Illes Balears, Spain 3) University of Münster, Germany 4) Institut d'Electronique et des Systèmes UMR5214, CNRS, University of Montpellier, France 5) C2N UMR 9001, CNRS, Université Paris Sud, Université Paris-Saclay, France
12:25 - 13:30	<b>Lunch break</b>

Time	Event
08:30 - 10:10	<b>Session 5 - Coupling and synchronization</b> <b>chaired by Antonio Hurtado, University of Strathclyde</b>
08:30 - 09:00	<b>Harmonic Photonic Potential: a design concept for miniaturized laser sources (invited)</b> <i>Alfredo de Rossi</i> <i>Thales Research and Technology, France</i>
09:00 - 09:30	<b>Self mode-locking and FM combs: An example of Huygens « Odd kind of sympathy » (invited)</b> <i>Benedikt Schwarz</i> <i>TU Wien, Austria</i>
09:30 - 09:50	<b>Synchronization of mutually delay-coupled non-identical quantum cascade lasers</b> <i>Thomas Erneux<sup>1</sup>, Daan Lenstra<sup>2</sup>, and Jan Danckaert<sup>3</sup></i> <i>1) Université Libre de Bruxelles, Optique Nonlinéaire Théorique, Belgium</i> <i>2) Institute of Photonics Integration, Eindhoven University of Technology, The Netherlands</i> <i>3) Vrije Universiteit Brussel, Physics Department, Belgium</i>
09:50 - 10:10	<b>Inter-mode beat frequency agility and phase noise reduction of an optical frequency comb quantum dash laser by time-delayed optical self-injection</b> <i>P. Fiala<sup>1</sup>, D. Auth<sup>1</sup>, C. Weber<sup>1</sup>, Q. Gaimard<sup>2</sup>, A. Ramdane<sup>2</sup>, S. Breuer<sup>1</sup></i> <i>1) Institute of Applied Physics, Technische Universität Darmstadt, Germany</i> <i>2) CNRS C2N, France</i>
10:10 - 10:40	<b>Coffee break</b>
10:40 - 12:20	<b>Session 6 - Semiconductor laser frequency combs</b> <b>chaired by Stefan Breuer, TU Darmstadt</b>
10:40 - 11:10	<b>Quantum cascade laser frequency comb: control of the phases and dual comb applications (invited)</b> <i>Jérôme Faist</i> <i>ETH Zurich, Switzerland</i>
11:10 - 11:40	<b>Modelling self-generation of optical frequency combs in quantum dot lasers (invited)</b> <i>Mariangela Gioannini</i> <i>Polito di Torino, Italy</i>
11:40 - 12:00	<b>Compact Semiconductor Comb Stabilization by Injection Locking with an Ultra-Stable Laser</b> <i>Karim Manamanni, Amine Chaouche-Ramdane, Omar Sahni, Vincent Roncin, Frédéric Du-Burck</i> <i>Laboratoire de Physique des Lasers, UMR CNRS 7538, Université Paris 13, Sorbonne-Paris-Cité, France</i>
12:00 - 12:20	<b>Broad optical spectrum generation and tailoring the comb properties by injection of a frequency comb</b> <i>Y.Doumbia<sup>1,2</sup>, T. Malica<sup>1,2</sup>, D. Wolferberger<sup>1,2</sup>, K. Panajotov<sup>3,4</sup>, M. Sciamanna<sup>1,2</sup></i> <i>1) Chaire Photonique, LMOPS, CentraleSupélec, Metz, France</i> <i>2) Université de Lorraine, CentraleSupélec, LMOPS, Metz, France</i> <i>3) Brussels Photonics Group (B-PHOT), Vrije Universiteit Brussel, Belgium</i> <i>4) Institute of Solid State Physics, Bulgarian Academy of Sciences, Bulgaria</i>
12:20 - 13:30	<b>Lunch break</b>
13:30 - 15:45	<b>Session 7 -Applications of laser nonlinear dynamics</b> <b>chaired by Marc Sciamanna</b>
13:30 - 14:15	<b>Optoelectronic Oscillators and Networks (keynote)</b> <i>Rajarshi Roy</i> <i>University of Maryland, U.S.A.</i>
14:15 - 14:45	<b>Photonic Physical Unclonable Functions for Authentication, True Random Number Generation and Cryptographic Key Generation on Demand (invited)</b> <i>Dimitri Syvridis</i> <i>National and Kapodistrian University of Athens, Greece</i>
14:45 - 15:05	<b>Characteristics of Chaos-Modulated Pulses in a Pulsed MOPA for Chaos Lidar Applications</b> <i>Jun-Da Chen, Hsin-Lin Ho, Han-Ling Tsay, Chung-Chih Lee, Fan-Yi Lin</i> <i>Institute of Photonics Technologies, Department of Electrical Engineering, National Tsing Hua University, Taiwan</i>
15:05 - 15:25	<b>VCSELs polarization dynamics for improved performance of photonic reservoir computing</b> <i>Jérémy Vatin<sup>1,2</sup>, Damien Rontani<sup>1,2</sup>, Marc Sciamanna<sup>1,2</sup></i> <i>1) Chaire Photonique, LMOPS, CentraleSupélec, Metz, France</i> <i>2) Université de Lorraine, CentraleSupélec, LMOPS, Metz, France</i>
15:25 - 15:45	<b>Photonic Microwave Harmonic Down-Conversion Using an Optically Injected Semiconductor Laser</b> <i>Pei Zhou, Nianqiang Li</i> <i>School of Optoelectronic Science and Engineering, Soochow University, China</i>