

EDUCATION

<b>Ph.D.</b>	Paris, France	<b>M.S.</b>	Grenoble, France
PARIS SACLAY UNIVERSITY	2012 - 2016	GRENOBLE INP - PHELMA	2009 - 2012

RESEARCH  
EXPERIENCES

<b>University of Maryland - National Institute of Standards and Technology</b>	Maryland, USA
ASSISTANT RESEARCH SCIENTIST	Jul. 2021 - present
<ul style="list-style-type: none"> <li>Study of chip-scale integrated micro-resonators made <math>\chi^{(3)}</math> susceptible material for non-linear optics applications.</li> <li>Study of novel dispersion designs for broader, shorter wavelength, and new state of frequency combs in pulse regime</li> <li>Mentoring of students</li> </ul>	
<b>University of Maryland - National Institute of Standards and Technology</b>	Maryland, USA
POSTDOCTORAL ASSOCIATE	Feb. 2017 - Jun. 2021
<ul style="list-style-type: none"> <li>Study of chip-scale integrated micro-resonators made of Silicon Nitride for <math>\chi^{(3)}</math> frequency comb applications.</li> <li>Development of in-house modelling tools, clean-room fabrication, development of new experimental setups</li> </ul>	
<b>Thales Research and Technology</b>	Palaiseau, France
PHD CANDIDATE	Dec. 2012 - Dec. 2016
<ul style="list-style-type: none"> <li>Study of carrier dynamics generated through <math>\chi^{(3)}</math> non-linearity in III-V photonic crystals cavities</li> <li>Development of in-house computational solvers (FDTD, FEM, CMT), fabrication and measurement with custom developed setups</li> </ul>	

ACADEMIC  
EXPERIENCE

<b>Teaching</b>	
<ul style="list-style-type: none"> <li>Teaching assistant – 1<sup>st</sup> and 2<sup>nd</sup> year undergraduate student – UNIVERSITY PARIS SACLAY – 2014</li> </ul>	
<b>Mentoring</b>	
<ul style="list-style-type: none"> <li>Highschool. Students: Christy Li – MONTGOMMERY BLAIR HS (NOW AT MIT) – Jul. 2021 →Aug. 2022</li> <li>Undergrad. Students: Dillion Cottrill – UNIVERSITY OF WEST VIRGINA – 2020 Kristiana Ramos – U.M.D – 2021→2022</li> <li>Graduate Students: Edgar Perez –U.M.D – 2018 → present Tahmid Raman – U.M.D – 2019→present Pradyoth Shandilya – U.M.B.C. – 2021→present</li> <li>Michal Chojnacky – U.M.D – 2022→present Shoa-Chein Ou – U.M.D – 2022→present</li> </ul>	
<b>Contribution to Funded Projects</b>	
<b>Support staff:</b>	
<ul style="list-style-type: none"> <li>Agence National de la Recherche (France): AUCTOPUSS (2013-2015) – ETHAN (2015-2016)</li> <li>DARPA (USA): DODOS (2017-2020) – ACES (2017-2021) – APhi (2019-present) – LUMOS (2021-present) – SAVaNT (2021-present)</li> <li>Space Force &amp; Air Force Research Laboratory (USA): PICs for SCPNT (2022-present)</li> </ul>	
<b>Co-Principal Investigator:</b>	
<ul style="list-style-type: none"> <li>Marsden Fund: “The light between: parametrically driven cavity solitons in pure-Kerr resonators” (2023-present)</li> </ul>	

SELECTED  
PUBLICATIONS

>40 peer-reviewed journal articles

>50 conference proceedings

2 book chapters

>1950 citations as of 05/2024

h-index of 24 as of 05/2024

<b>Articles</b>
<ul style="list-style-type: none"> <li>G. Moille et al. “Parametrically driven pure-Kerr temporal solitons in a chip-integrated microcavity”. NATURE PHOTONICS 18 617-624 (2024).</li> <li>G. Moille et al. “Kerr-Induced Synchronization of a Cavity Soliton to an Optical Reference”. NATURE 624.7991 (2023).</li> <li>G. Moille al. “Ultra-broadband Kerr microcomb through soliton spectral translation”. NATURE COMM. 12.1 (2021).</li> <li>G. Moille et al. “Dissipative Kerr Solitons in a III-V Microresonator”. LASERS &amp; PHOTONICS REV 14.8 (2020).</li> <li>G. Moille et al. “Broadband resonator-waveguide coupling for efficient extraction of octave-spanning microcombs”. OPTICS LETTERS 44.19 (2019).</li> </ul>
<b>Book Chapter</b>
<ul style="list-style-type: none"> <li>Colman, S. Combr��, A. De Rossi, A. Martin, and G. Moille. Nonlinear Meta- Optics. “Nonlinear Photonic Crystals”, pp. 199-250. CRC Press, 2020.</li> <li>G. Moille, S. Combr��, and A. De Rossi. Green Photonics and Electronics. “Nanophotonic Approach to Energy-Efficient Ultra-Fast All-Optical Gates”, pp. 107-137 . Springer, Cham, 2017</li> </ul>

## Conferences

- G. Moille et al. "All-Optical Kerr Synchronization of a Dissipative Kerr Soliton Microcomb to an Optical Reference". (invited) Nonlinear Optics. (2023). Nonlinear Optics. (2023)
- G. Moille et al. "Two-Dimensional Frequency Comb from a Single Dual-Pumped Microring Dissipative Kerr Soliton". (highlighted) CLEO: Science and Innovations. (2023).
- G. Moille et al. "All-Optical Kerr Synchronization of a Dissipative Kerr Soliton Microcomb to an Optical Reference for Clockwork Operation". (postdeadline) CLEO: Science and innovations. (2023).
- G. Moille et al. "Ultra-Broadband Dissipative Kerr Soliton Microcomb through Dual Pumping Operation". (highlighted) CLEO: Science and Innovations. (2021).
- G. Moille et al. "Stable Dissipative Kerr Solitons in a AlGaAs Microresonator Through Cryogenic Operation". (highlighted) CLEO: Science and Innovations. (2020).

## Outreach

- Maintaining and updating an active github profile to share scripts for experiment control and in-house developed simulations tools. Combined, they account for **31 forks, 51 stars and an average of 30 unique views per week**.

## Peer Reviewing

- Referee for *Optica*, *JOSA B*, *Optics Letters*, *Optics Express*, *OSA Continuum*, *Nature Communications*, *Physical Review Letters*, *Physical Review Applied*, *Physical Review A*, *Physical Review Research*, *Laser and Photonics Reviews*, *ACS Photonics*, *Applied Physics Letters Photonics*, *Micromachine*, *SPIE Advanced Photonics*

## Committee Member

- 2010-2020 — Siegman international school: Review applications for the OSA Siegman international school on laser for the 2019 and 2020 editions
- 2023 - present — SPIE Photonics West: program committee member for Laser Resonators, Microresonators, and Beam Control XXVI conference

## Relevant Work

Electromagnetism ● ● ● ● ● ● ● ●  
Non-Linear Optics ● ● ● ● ● ● ● ●  
Optoelectronics ● ● ● ● ● ● ● ●  
Quantum Physics ● ● ● ● ● ● ● ●

## E.M. Modeling

Comsol ● ● ● ● ● ● ● ●  
Lumerical ● ● ● ● ● ● ● ●  
Mathematica ● ● ● ● ● ● ● ●  
HFSS ● ● ● ● ● ● ● ●

## Experimental Skills

Photonics Charac. ● ● ● ● ● ● ● ●  
Non-Linear Optics ● ● ● ● ● ● ● ●  
Radio Freq. ● ● ● ● ● ● ● ●  
Metrology ● ● ● ● ● ● ● ●

## Languages

French ● ● ● ● ● ● ● ●  
English ● ● ● ● ● ● ● ●  
Russian ● ● ● ● ● ● ● ●  
Italian ● ● ● ● ● ● ● ●

## NanoFab

Design Layout ● ● ● ● ● ● ● ●  
EBL ● ● ● ● ● ● ● ●  
Dy Etching ● ● ● ● ● ● ● ●  
Wet Etching ● ● ● ● ● ● ● ●

# Complete List of Publications

## POPULAR WRITING

G. Moille and K. Srinivasan. **Small Cavities Make Noisy Homes for Light.** *American Physical Society* VOL. 13 (2020).

## JOURNAL ARTICLES

### 2024

- U. A. Javid, M. Chojnacky, K. Srinivasan, and G. Moille. **Terahertz Voltage-controlled Oscillator from a Kerr-Induced Synchronized Soliton Microcomb.** ARXIV:2404.16597 (2024)
- G. Moille, U. A. Javid, M. Chojnacky, P. Shandilya, C. Menyuk, and K. Srinivasan. **AC-Josephson Effect and Sub-Comb Mode-Locking in a Kerr-Induced Synchronized Cavity Soliton.** ARXIV:2402.08154 (2024)
- G. Moille, P. Shandilya, A. Niang, C. Menyuk, G. Carter, and K. Srinivasan. **Versatile Optical Frequency Division with Kerr-induced Synchronization at Tunable Microcomb Synthetic Dispersive Waves.** ARXIV:2403.00109 (2024)
- G. Moille, D. Westly, and K. Srinivasan. **Broadband Visible Wavelength Microcomb Generation In Silicon Nitride Microrings Through Air-Clad Dispersion Engineering.** ARXIV:2404.01577 (2024)
- G. Moille, P. Shandilya, J. Stone, C. Menyuk, and K. Srinivasan. **All-Optical Noise Quenching of An Integrated Frequency Comb.** ARXIV:2405.01238 (2024)
- G. Moille, M. Leonhardt, D. Paligora, N. Englebert, F. Leo, J. Fatome, K. Srinivasan, and M. Erkintalo. **Parametrically Driven Pure-Kerr Temporal Solitons in a Chip-Integrated Microcavity.** NATURE PHOTONICS (2024).
- J. Stone, D. Westly, G. Moille, and K. Srinivasan. **On-Chip Kerr Parametric Oscillation with Integrated Heating for Enhanced Frequency Tuning and Control.** OPTICS LETTERS 49.11 (2024).
- C. J. Flower, M. Jalali Mehrabad, L. Xu, G. Moille, D. G. Suarez-Forero, O. Örsel, G. Bahl, Y. Chembo, K. Srinivasan, S. Mittal, and M. Hafezi. **Observation of Topological Frequency Combs.** SCIENCE 384.6702 (2024).

### 2023

- M. Soroush, E. Simsek, G. Moille, K. Srinivasan, and C. R. Menyuk. **Predicting Broadband Resonator-Waveguide Coupling for Microresonator Frequency Combs through Fully Connected and Recurrent Neural Networks and Attention Mechanism.** ACS PHOTONICS (2023).
- G. Moille, X. Lu, J. Stone, D. Westly, and K. Srinivasan. **Fourier Synthesis Dispersion Engineering of Photonic Crystal Microrings for Broadband Frequency Combs.** COMMUNICATIONS PHYSICS 6.1 (2023).
- E. F. Perez, G. Moille, X. Lu, J. Stone, F. Zhou, and K. Srinivasan. **High-Performance Kerr Microresonator Optical Parametric Oscillator on a Silicon Chip.** NATURE COMMUNICATIONS 14.1 (2023).
- G. Moille, J. Stone, M. Chojnacky, R. Shrestha, U. A. Javid, C. Menyuk, and K. Srinivasan. **Kerr-Induced Synchronization of a Cavity Soliton to an Optical Reference.** NATURE 624.7991 (2023).

### 2022

- F. Zhou, X. Lu, A. Rao, J. Stone, G. Moille, E. Perez, D. Westly, and K. Srinivasan. **Hybrid-Mode-Family Kerr Optical Parametric Oscillation for Robust Coherent Light Generation on Chip.** LASER & PHOTONICS REVIEWS (2022).
- G. Moille, D. Westly, E. F. Perez, M. Metzler, G. Simelgor, and K. Srinivasan. **Integrated Buried Heaters for Efficient Spectral Control of Air-Clad Microresonator Frequency Combs.** APL PHOTONICS 7.12 (2022).
- J. R. Stone, X. Lu, G. Moille, and K. Srinivasan. **Efficient Chip-Based Optical Parametric Oscillators from 590 to 1150 Nm.** APL PHOTONICS 7.12 (2022).
- J. R. Stone, G. Moille, X. Lu, and K. Srinivasan. **Conversion Efficiency in Kerr-microresonator Optical Parametric Oscillators: From Three Modes to Many Modes.** PHYSICAL REVIEW APPLIED 17.2 (2022).
- A. Chopin, G. Marty, I. Ghorbel, G. Moille, A. Martin, S. Combr  , F. Raineri, and A. De Rossi. **Canonical Resonant Four-Wave-Mixing in Photonic Crystal Cavities: Tuning, Tolerances and Scaling.** IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS 29.1: NONLINEAR INTEGRATED PHOTONICS (2022).

### 2021

- T. C. Briles, S.-P. Yu, L. Chang, C. Xiang, J. Guo, D. Kinghorn, G. Moille, K. Srinivasan, J. E. Bowers, and S. B. Papp. **Hybrid InP and SiN Integration of an Octave-Spanning Frequency Comb.** APL PHOTONICS 6.2 (2021).
- A. Rao, G. Moille, X. Lu, D. A. Westly, D. Sacchetto, M. Geiselmann, M. Zervas, S. B. Papp, J. Bowers, and K. Srinivasan. **Towards Integrated Photonic Interposers for Processing Octave-Spanning Microresonator Frequency Combs.** LIGHT: SCIENCE & APPLICATIONS 10.1 (2021).
- G. Moille, E. F. Perez, J. R. Stone, A. Rao, X. Lu, T. S. Rahman, Y. K. Chembo, and K. Srinivasan. **Ultra-Broadband Kerr Microcomb through Soliton Spectral Translation.** NATURE COMMUNICATIONS 12.1 (2021).

- S.-P. Yu, D. C. Cole, H. Jung, G. T. Moille, K. Srinivasan, and S. B. Papp. *Spontaneous Pulse Formation in Edgeless Photonic Crystal Resonators*. NATURE PHOTONICS 15.6 (2021).
- S. Mittal, G. Moille, K. Srinivasan, Y. K. Chembo, and M. Hafezi. *Topological Frequency Combs and Nested Temporal Solitons*. NATURE PHYSICS 17.10 (2021).
- X. Lu, G. Moille, A. Rao, and K. Srinivasan. *Proposal for Noise-Free Visible-Telecom Quantum Frequency Conversion through Third-Order Sum and Difference Frequency Generation*. OPTICS LETTERS 46.2 (2021).
- G. Moille, D. Westly, G. Simelgor, and K. Srinivasan. *Impact of the Precursor Gas Ratio on Dispersion Engineering of Broadband Silicon Nitride Microresonator Frequency Combs*. OPTICS LETTERS 46.23 (2021).
- G. Moille, D. Westly, N. G. Orji, and K. Srinivasan. *Tailoring Broadband Kerr Soliton Microcombs via Post-Fabrication Tuning of the Geometric Dispersion*. APPLIED PHYSICS LETTERS 119.12 (2021).

## 2020

- X. Lu, G. Moille, A. Rao, D. A. Westly, and K. Srinivasan. *Efficient Photoinduced Second-Harmonic Generation in Silicon Nitride Photonics*. NATURE PHOTONICS (2020).
- X. Lu, G. Moille, A. Rao, D. A. Westly, and K. Srinivasan. *On-Chip Optical Parametric Oscillation into the Visible: Generating Red, Orange, Yellow, and Green from a near-Infrared Pump*. OPTICA 7.10 (2020).
- X. Lu, A. Rao, G. Moille, D. A. Westly, and K. Srinivasan. *Universal Frequency Engineering Tool for Microcavity Nonlinear Optics: Multiple Selective Mode Splitting of Whispering-Gallery Resonances*. PHOTONICS RESEARCH 8.11 (2020).
- L. Chang, W. Xie, H. Shu, Q.-F. Yang, B. Shen, A. Boes, J. D. Peters, W. Jin, C. Xiang, S. Liu, et al. *Ultra-Efficient Frequency Comb Generation in AlGaAs-on-insulator Microresonators*. NATURE COMMUNICATIONS 11.1 (2020).
- G. Moille, L. Chang, W. Xie, A. Rao, X. Lu, M. Davanco, J. E. Bowers, and K. Srinivasan. *Dissipative Kerr Solitons in a III-V Microresonator*. LASERS & PHOTONICS REV 14.8 (2020).
- E. Perez, G. Moille, X. Lu, D. Westly, and K. Srinivasan. *Automated On-Axis Direct Laser Writing of Coupling Elements for Photonic Chips*. OPTICS EXPRESS 28.26 (2020).
- Q. Li, G. Moille, H. Taheri, A. Adibi, and K. Srinivasan. *Improved Coupled-Mode Theory for High-Index-Contrast Photonic Platforms*. PHYSICAL REVIEW A: ATOMIC, MOLECULAR, AND OPTICAL PHYSICS 102.6 (2020).

## 2019

- I. Ghorbel, F. Swiadek, R. Zhu, D. Dolfi, G. Lehoucq, A. Martin, G. Moille, L. Morvan, R. Braive, S. Combrié, et al. *Optomechanical Gigahertz Oscillator Made of a Two Photon Absorption Free Piezoelectric III/V Semiconductor*. APL PHOTONICS 4.11 (2019).
- X. Lu, G. Moille, A. Singh, Q. Li, D. A. Westly, A. Rao, S.-P. Yu, T. C. Briles, S. B. Papp, and K. Srinivasan. *Milliwatt-Threshold Visible-Telecom Optical Parametric Oscillation Using Silicon Nanophotonics*. OPTICA 6.12 (2019).
- S.-P. Yu, T. C. Briles, G. T. Moille, X. Lu, S. A. Diddams, K. Srinivasan, and S. B. Papp. *Tuning Kerr-soliton Frequency Combs to Atomic Resonances*. PHYSICAL REVIEW APPLIED 11.4 (2019).
- G. Moille, X. Lu, A. Rao, Q. Li, D. A. Westly, L. Ranzani, S. B. Papp, M. Soltani, and K. Srinivasan. *Kerr-Microresonator Soliton Frequency Combs at Cryogenic Temperatures*. PHYSICAL REVIEW APPLIED 12.3 (2019).
- X. Lu, G. Moille, Q. Li, D. A. Westly, A. Singh, A. Rao, S.-P. Yu, T. C. Briles, S. B. Papp, and K. Srinivasan. *Efficient Telecom-to-Visible Spectral Translation through Ultralow Power Nonlinear Nanophotonics*. NATURE PHOTONICS 13.9 (2019).
- X. Lu, Q. Li, D. A. Westly, G. Moille, A. Singh, V. Anant, and K. Srinivasan. *Chip-Integrated Visible-Telecom Entangled Photon Pair Source for Quantum Communication*. NATURE PHYSICS 15.4 (2019).
- G. Moille, Q. Li, T. C. Briles, S.-P. Yu, T. Drake, X. Lu, A. Rao, D. Westly, S. B. Papp, and K. Srinivasan. *Broadband Resonator-Waveguide Coupling for Efficient Extraction of Octave-Spanning Microcombs*. OPTICS LETTERS 44.19 (2019).
- G. Moille, Q. Li, L. Xiyuan, and K. Srinivasan. *pyLLE: A Fast and User Friendly Lugiato-Lefever Equation Solver*. JOURNAL OF RESEARCH OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY 124 (2019).

## 2018

- C. Husko, J. Kang, G. Moille, J. D. Wood, Z. Han, D. Gosztola, X. Ma, S. Combrié, A. De Rossi, M. C. Hersam, et al. *Silicon-Phosphorene Nanocavity-Enhanced Optical Emission at Telecommunications Wavelengths*. NANO LETTERS 18.10 (2018).
- G. Moille, S. Combrié, L. Morgenroth, G. Lehoucq, S. Sauvage, M. El Kurdi, P. Boucaud, A. de Rossi, and X. Checoury. *Nonlinearities in Gaas Cavities with High Cw Input Powers Enabled by Photo-Oxidation Quenching through Ald Encapsulation*. OPTICS EXPRESS 26.5 (2018).
- G. Moille, Q. Li, S. Kim, D. Westly, and K. Srinivasan. *Phased-Locked Two-Color Single Soliton Microcombs in Dispersion-Engineered Si<sub>3</sub>N<sub>4</sub> Resonators*. OPTICS LETTERS 43.12 (2018).

## 2017

S. Combri , G. Lehoucq, G. Moille, A. Martin, and A. De Rossi. *Comb of High-Q Resonances in a Compact Photonic Cavity*. LASER & PHOTONICS REVIEWS 11.6 (2017).

G. Moille, S. Combri , K. Fuchs, M. Yacob, J. P. Reithmaier, and A. de Rossi. *Acceleration of the Nonlinear Dynamics in P-Doped Indium Phosphide Nanoscale Resonators*. OPTICS LETTERS 42.4 (2017).

## 2016

G. Moille, S. Combri , L. Morgenroth, G. Lehoucq, F. Neuilly, B. Hu, D. Decoster, and A. de Rossi. *Integrated All-Optical Switch with 10 Ps Time Resolution Enabled by ALD*. LASER & PHOTONICS REVIEWS 10.3 (2016).

M. Gay, L. Bramerie, L. A. Neto, S. D. Le, J.-C. Simon, C. Peucheret, Z. Han, X. Checoury, G. Moille, J. Bourderionnet, et al. *Silicon-on-Insulator RF Filter Based on Photonic Crystal Functions for Channel Equalization*. IEEE PHOTONICS TECHNOLOGY LETTERS 28.23 (2016).

G. Moille, S. Combri , and A. De Rossi. *Modeling of the Carrier Dynamics in Nonlinear Semiconductor Nanoscale Resonators*. PHYSICAL REVIEW A 94.2 (2016).

## 2015

Z. Han, G. Moille, X. Checoury, J. Bourderionnet, P. Boucaud, A. De Rossi, and S. Combri . *High-Performance and Power-Efficient  $2 \times 2$  Optical Switch on Silicon-on-Insulator*. OPTICS EXPRESS 23.19 (2015).

## 2013

D. Fowler, S. Boutami, M. Duperron, G. Moille, G. Badano, F. Boulard, J. Rothman, O. Gravrand, and R. E. de Lamaestre. *Partially Localized Hybrid Surface Plasmon Mode for Thin-Film Semiconductor Infrared Photodetection*. OPTICS LETTERS 38.3 (2013).

## BOOK CHAPTERS

P. Colman, S. Combri , A. De Rossi, A. Martin, and G. Moille. *Nonlinear Meta-Optics*. "Nonlinear Photonic Crystals", pp. 199–250 . 2020.

G. Moille, S. Combri , and A. De Rossi. *Green Photonics and Electronics*. "Nanophotonic Approach to Energy-Efficient Ultra-Fast All-Optical Gates", pp. 107–137 . 2017.

## CONFERENCE PROCEEDINGS

### 2023

C. Li et al. "Dispersion Engineering and Low-Loss Optimization of Footprint-Efficient and Rotationally Asymmetric Resonators". CLEO: Science and Innovations. (2023).

G. Moille et al. "All-Optical Kerr Synchronization of a Dissipative Kerr Soliton Microcomb to an Optical Reference". Nonlinear Optics. (2023).

G. Moille et al. "Optimization of a Cavity Soliton Dispersive Wave through Kerr-Induced Synchronization". 2023 IEEE Photonics Conference (IPC). (2023).

G. Moille. "Dissipative Kerr Soliton for Microcomb Optical Clock: From Dispersion Engineering to Nonlinear Synchronization". 2023 IEEE Research and Applications of Photonics in Defense Conference (RAPID). (2023).

G. Moille et al. "Parametrically-Driven Cavity Solitons in a Pure Kerr Microresonator". 2023 Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC). (2023).

G. Moille et al. "Two-Dimensional Frequency Comb from a Single Dual-Pumped Microring Dissipative Kerr Soliton". (Highlighted) CLEO: Science and Innovations. (2023).

G. Moille et al. "All-Optical Kerr Synchronization of a Dissipative Kerr Soliton Microcomb to an Optical Reference for Clockwork Operation". (Postdeadline) CLEO: Science and Innovations. (2023).

G. Moille et al. "Octave Spanning Microcomb Dispersive Wave Optimization from Self-Balanced Soliton under Kerr-Induced Synchronization". Frontiers in Optics + Laser Science 2023 (FiO, LS) (2023), Paper FTh3E.2. (2023).

G. Moille et al. "On-Chip Pure  $\chi^{(3)}$  Parametrically-Driven Temporal Cavity Solitons". CLEO 2023. (2023).

P. H. Shandilya et al. "A Study of Dual-Pumped Microresonator Solitons Using 3-Wave Equations". Frontiers in Optics + Laser Science 2023 (FiO, LS) (2023), Paper JW4A.48. (2023).

J. R. Stone et al. "Advancing Kerr Microresonator Optical Parametric Oscillators for Chip-Based Laser Systems across the Visible and near-Infrared". CLEO 2023. (2023).

### 2022

G. Moille et al. "Engineering of Modal Coupling of Counter-Propagating Waves for Multi-Color Dissipative Kerr Soliton Operation". 2022 Conference on Lasers and Electro-Optics (CLEO). (2022).

G. Moille et al. "Temporal Binding of a Coherent Spectrally Translated Pulse from a Dissipative Kerr Soliton in a Synthetic Frequency Lattice". CLEO: QELS\_Fundamental Science. (2022).

G. Moille et al. “*Towards Lower Repetition Rate and Visible Wavelength Microresonator Frequency Combs for Optical Atomic Clocks*”. CLEO: Science and Innovations. (2022).

## 2021

S. Mittal et al. “*Topological Optical Frequency Combs and Dissipative Kerr Super-Solitons*”. European Quantum Electronics Conference. (2021).

G. Moille et al. “*Impact of Stoichiometric Silicon Nitride Growth Conditions on Dispersion and Broadband Kerr Microcombs in the Near-Visible*”. 2021 Conference on Lasers and Electro-Optics (CLEO). (2021).

G. Moille et al. “*Ultra-Broadband Dissipative Kerr Soliton Microcomb through Dual Pumping Operation*”. (Highlighted) CLEO: Science and Innovations. (2021).

A. Rao et al. “*Up to 50 dB Extinction in Broadband Single-Stage Thermo-Optic Mach-Zehnder Interferometers for Programmable Low-Loss Silicon Nitride Photonic Circuits*”. 2021 Conference on Lasers and Electro-Optics (CLEO). (2021).

## 2020

J. A. Black et al. “*Optical Synthesis by Spectral Translation*”. 2020 Conference on Lasers and Electro-Optics (CLEO). (2020).

T. Briles et al. “*Semiconductor Laser Integration for Octave-Span Kerr-soliton Frequency Combs*”. 2020 Conference on Lasers and Electro-Optics (CLEO). (2020).

X. Lu et al. “*Efficient Widely-Separated Optical Parametric Oscillation*”. 2020 Conference on Lasers and Electro-Optics (CLEO). (2020).

X. Lu et al. “*Efficient Second Harmonic Generation in a Si<sub>3</sub>N<sub>4</sub> Microring*”. CLEO: Science and Innovations. (2020).

G. Moille et al. “*Post-Processing Dispersion Engineering of Frequency Combs In Microresonator Addressing Atomic Clock*”. 2020 Conference on Lasers and Electro-Optics (CLEO). (2020).

G. Moille et al. “*Stable Dissipative Kerr Solitons in a AlGaAs Microresonator Through Cryogenic Operation*”. 2020 Conference on Lasers and Electro-Optics (CLEO). (2020).

G. Moille et al. “*Stable Dissipative Kerr Solitons in a AlGaAs Microresonator through Cryogenic Operation*”. (Highlighted) CLEO: Science and Innovations. (2020).

A. Rao et al. “*Integrated Photonic Interposers for Processing Octave-Spanning Microresonator Frequency Combs*”. CLEO: Science and Innovations. (2020).

S.-P. Yu et al. “*Spontaneous Soliton Formation in Photonic-Crystal Ring Resonators*”. 2020 Conference on Lasers and Electro-Optics (CLEO). (2020).

## 2019

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