

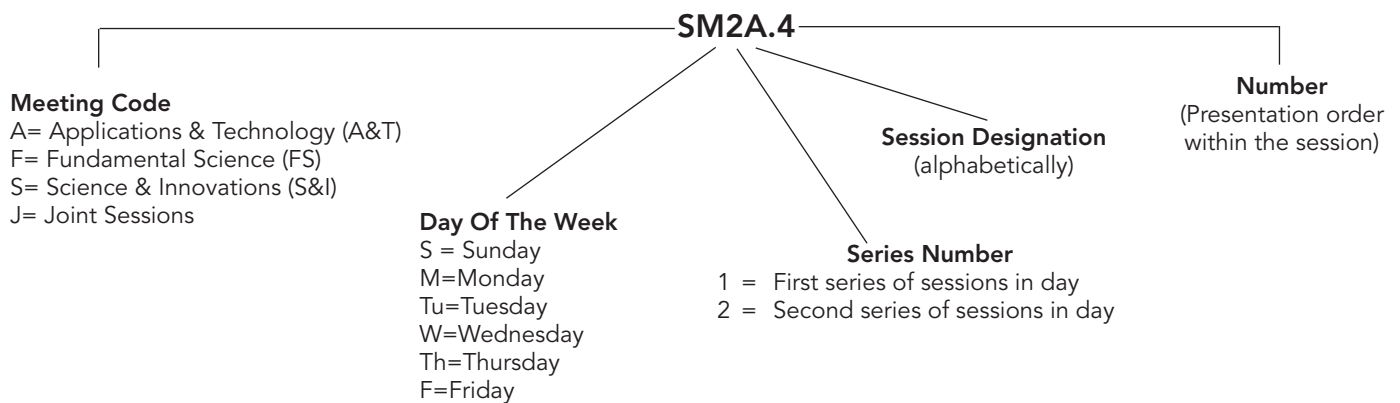
# CLEO Conference

7–12 May 2023

## Agenda of Sessions — Sunday, 7 May

Pacific Daylight Time Zone (PDT)	
07:00–17:30	Registration
08:30–12:30	<b>Short Courses</b> SC149: Foundations of Nonlinear Optics SC474: Super-Resolution Imaging: Basic Nanoscopy Principles and Its Applications to Biology, Chemistry and Materials Science SC502: Topological Photonics
13:30–17:30	<b>Short Courses</b> SC396: Principles and Applications of Guided Wave Nonlinear Optics SC439: Attosecond Optics: From Few-Cycle High Power MIR Driving Lasers to Phase-Controlled Water Window X-rays SC479: Introduction to Quantum Optics SC515: Optical Machine Learning NEW

## Explanation of Session Codes



The first letter of the code designates the meeting (For instance, A=Applications & Technology, F=Fundamental Science, S=Science and Innovations, J=Joint). The second element denotes the day of the week (Monday=M, Tuesday=Tu, Wednesday=W, Thursday=Th, Friday=F). The third element indicates the session series in that day (for instance, 2 would denote the second parallel sessions in that day). Each series of sessions begins with the letter A in the fourth element and continues alphabetically through a series of parallel sessions. The number on the end of the code (separated from the session code with a period) signals the position of the talk within the session (first, second, third, etc.). For example, a presentation coded SM2A.4 indicates that this paper is part of Science and Innovations (S) and is being presented on Monday (M) in the second series of sessions (2), and is the first parallel session (A) in that series and the fourth paper (4) presented in that session.

# Agenda of Sessions — Monday, 8 May

Pacific Daylight Time Zone (PDT)	Executive Ballroom 210A	Executive Ballroom 210B	Executive Ballroom 210C	Executive Ballroom 210D	Executive Ballroom 210E	Executive Ballroom 210F	Executive Ballroom 210G	Executive Ballroom 210H	Meeting Room 211AB	Meeting Room 211CD	Meeting Room 212AB	Meeting Room 212CD	Marriott Salon 1	Marriott Salon 2	Marriott Salon 3	Marriott Salon 4	Marriott Salon 5	Marriott Salon 6
07:00–18:00	Registration																	
08:00–10:00	FM1A • Quantum Network Protocols	FM1B • Topological Processes I	JM1C • Symposium on Celebrating optical-guided-wave solitons - Theory & Experiments I: Recollections of Linn Mollenauer	SM1D • Laser Facilities	FM1E • Solid State Quantum Optical Sources	SM1F • Nonlinear Dynamics in Fiber Systems	SM1G • Novel Approaches to Light Manipulation	SM1H • Advanced Materials for Quantum Optics Process	SM1I • Super-resolution and Quantum Methods	SM1J • Electro Optic Resonators	SM1K • Quantum Optics with Diamond Vacancy Centers	SM1L • Fiber Frequency Combs	SM1M • Pulse Characterization	SM1N • THz Imaging	JM1O • Symposium on Rare-earth Doped Integrated Gain and Devices I	SM1P • Integrated Photonic Processors	AM1Q • A&T Topical Review on Silicon Photonics for Optical I/O, Artificial Intelligence, and High Performance	AM1R • A&T Topical Review on Advanced Micro/Nanoscale Lasers and Modulators I
08:30–12:30	<p style="text-align: center;"><b>Short Courses</b></p> <p style="text-align: center;">SC157: Characterization and Synthesis of Laser Beam Shapes: From Optimum Spatial Shaping to Optical Vortex Beam Generation            SC361: Coherent Mid-IR Light: Generation and Applications            SC475: Metasurface Flat Optics            SC516: Single Photon Generation, Detection, and Applications NEW</p>																	
10:00–10:30	Coffee, Concourse Level																	
10:30–12:30	FM2A • Advances in Qubit Operations	FM2B • Topological Processes II	JM2C • Symposium on Celebrating optical-guided-wave solitons - Theory & Experiments II: Early Developments	SM2D • Spectral Control and Manipulation	FM2E • Quantum Light Detectors	SM2F • Ultrafast Pulse Manipulation and Novel Laser Systems	SM2G • Metasurfaces	SM2H • Fiber Optics and Glass Material	SM2I • Novel Transmission Techniques and Devices	SM2J • Heterogenous Integration	SM2K • Optical Frequency Metrology and Compact Cavities	FM2L • Nonclassical States of Light	AM2M • Photonic Sensing and Imaging	AM2N • Quantum Enabling Technology	JM2O • Symposium on Rare-earth Doped Integrated Gain and Devices II	SM2P • Artificial Intelligence Integration	AM2Q • A&T Topical Review on Silicon Photonics for Optical I/O, Artificial Intelligence, and High Performance Computing II	AM2R • Direct Writing
12:30–13:30	Lunch (on Your Own)																	
13:30–15:30	FM3A • Quantum Computing and Simulation	FM3B • Non-Hermiticity, Symmetry, and Symmetry Breaking I	JM3C • Symposium on Celebrating optical-guided-wave solitons - Theory & Experiments III: Contemporary Fiber Solitons	FM3D • Applications of Plasmonics and Nanophotonics I	JM3E • Emerging Topics in Quantum Photonics	SM3F • Strong Light-matter Interactions	SM3G • Mid-infrared Photonics	FM3H • Low Dimensional Materials	AM3I • Nonlinear Transmission	SM3J • Joint Session on Optical and Neuromorphic Computing I	SM3K • Integrated Nonlinear Photonics I	SM3L • Light Propagation in Multi-mode Fibers and Applications I	AM3M • Photonic Integration	FM3N • Quantum Communication and Quantum Photonics I	SM3O • Technological Advancements in Frequency Combs	SM3P • Integrated Quantum Photonics	AM3Q • Advancements in Optical Coherence Tomography	AM3R • Surface Processing
13:30–17:30	<p style="text-align: center;"><b>Short Courses</b></p> <p style="text-align: center;">SC352: Ultrafast Laser Pulse Compression, Shaping, and Characterization            SC410: Finite Element Modeling Methods for Photonics and Optics            SC455: Integrated Photonics for Quantum Information Science and Technology            SC477: LiDAR and Remote Sensing: An Application-Oriented Introduction</p>																	
15:30–16:00	Coffee, Concourse Level																	
16:00–18:00	AM4A • Quantum States and Encoding	FM4B • Non-Hermiticity, Symmetry, and Symmetry Breaking II	JM4C • Symposium on Celebrating optical-guided-wave solitons - Theory & Experiments IV: Modern Soliton Perspectives	FM4D • Applications of Plasmonics and Nanophotonics II	FM4E • Integrated Quantum Light Sources	SM4F • Nonlinear Phenomena in Fiber-based Systems	SM4G • Light Detection and Mode Manipulation	SM4H • Advanced Optical Material Characterization	SM4I • Integrated Photonics for High Capacity Transmission	SM4J • Joint Session on Optical and Neuromorphic Computing II	AM4K • Fiber Sensors and Novel Instruments	SM4L • Light Propagation in Multi-mode Fibers and Applications II	AM4M • Integrated Photonics	AM4N • Quantum Communication and Quantum Photonics II	SM4O • Spectroscopic Sensing	SM4P • Integrated LiDAR	AM4Q • Electromagnetic Scattering and Spectroscopy from MHz to X-ray	AM4R • High Precision Laser Micromachining and Analytics

# Agenda of Sessions — Tuesday, 9 May

Pacific Daylight Time Zone (PDT)	Executive Ballroom 210A	Executive Ballroom 210B	Executive Ballroom 210C	Executive Ballroom 210D	Executive Ballroom 210E	Executive Ballroom 210F	Executive Ballroom 210G	Executive Ballroom 210H	Meeting Room 211AB	Meeting Room 211CD	Meeting Room 212AB	Meeting Room 212CD	Marriott Salon 1	Marriott Salon 2	Marriott Salon 3	Marriott Salon 4	Marriott Salon 5	Marriott Salon 6
07:00–18:30	Registration																	
08:00–10:00	JTU1A • Joint Plenary Session I																	
10:00–16:00	<b>Exhibits Hours</b> Exhibit Only Hours: 10:00–13:00 and 15:00–16:00 Coffee with Exhibits: 10:00–10:30 <i>The Hub</i>																	
10:30–14:30	<b>Short Courses</b> SC403: NanoCavity Quantum Electrodynamics and Applications SC438: Photonic Metamaterials SC517: Quantum Optomechanics — From Basics to Applications NEW SC518: Communication With Light NEW																	
11:00–12:30	How to Strengthen DE&I Education Pathways from High School to Undergraduate and Post Graduate Level, Room 210E																	
11:30–13:00	JTU2A • Joint Poster Session I and Lunch (on your own)																	
13:00–15:00	FTu3A • Tools for Quantum Information Processing	FTu3B • Nonlinear Phenomena in Classical and Quantum Systems	FTu3C • Nanophotonic Single and Multi Photon Sources	FTu3D • Time Interfaces, Time Crystals, and Synthetic Dimensions	JTu3E • Symposium on Enabling Highly Multimode Nonlinear and Quantum Photonics I	STu3F • Quantum Optomechanics and Quantum Memories	STu3G • Optical Wireless and Microwave Photonics	ATu3H • Advances in LEDs	ATu3I • A&T Topical Review on Advanced Micro/Nanoscale Lasers and Modulators II	STu3J • Tunable Passive Devices and Circuits	ATu3K • Imaging Technologies	STu3L • Nonlinear Optics in Thin Film Lithium Niobate	FTu3M • High-Energy Density Physics using Ultra-Intense Light	STu3N • Optical Devices and Processing I	STu3O • Optical Methods for Mechanical and Motion Sensing	STu3P • Integrated Lasers I	ATu3Q • Machine Learning for Microscopy	ATu3R • Lasers Sources
15:00–16:00	Exhibit Only Hours: 15:00–16:00 Coffee with Exhibits: 15:00–15:30																	
16:00–18:00	FTu4A • Quantum Sensing and Measurement	FTu4B • Nonlinear Processes in Fibers and Waveguides	FTu4C • Nonlinear and Coherent Interaction and Control of Plasmonic Phenomena	FTu4D • Time Crystals and Temporal Control	JTu4E • Symposium on Enabling Highly Multimode Nonlinear and Quantum Photonics II	STu4F • Tissue Imaging Methods	STu4G • Short Reach Transmission Systems	STu4H • Chirped-pulse and Parametric Amplifiers	ATu4I • Optical Sensing of Physical and Perturbed Environments	STu4J • Optical Vortices on Chip	ATu4K • Novel Instruments for Ranging and Laser Spectroscopy	STu4L • Advances and Application of Integrated Frequency Combs	FTu4M • Ultrafast Science of Molecular and Many-Body Systems	STu4N • Optical Devices and Processing II	STu4O • Compact Biological and Chemical Sensors	STu4P • Integrated Lasers II	ATu4Q • Neuroimaging and Neuroscience	ATu4R • Beam Manipulation
18:00–19:30	The LaserNetUS Network: Science and Opportunities, Room 211CD																	

# Agenda of Sessions — Wednesday, 10 May

Pacific Daylight Time Zone (PDT)	Executive Ballroom 210A	Executive Ballroom 210B	Executive Ballroom 210C	Executive Ballroom 210D	Executive Ballroom 210E	Executive Ballroom 210F	Executive Ballroom 210G	Executive Ballroom 210H	Meeting Room 211AB	Meeting Room 211CD	Meeting Room 212AB	Meeting Room 212CD	Marriott Salon 1	Marriott Salon 2	Marriott Salon 3	Marriott Salon 4	Marriott Salon 5	Marriott Salon 6
07:30–18:30	Registration																	
08:00–10:00	JW1A • Joint Plenary Session II																	
10:00–16:00	<b>Exhibits Hours</b> Exhibit Only Hours: 10:00–13:00 and 15:00–16:00 Coffee Break: 10:00–10:30 <i>The Hub</i>																	
11:00–12:30	How to Make Diversity Thrive in the Workplace, Room 210E																	
11:30–13:00	JW2A • Joint Poster Session II & Lunch <i>(on your own)</i>																	
13:00–15:00	JW3A • Symposium on Integrated Photonics I	FW3B • Solitons and Frequency Combs I	FW3C • Numerical Design and Modeling of Nanophotonic Systems I	FW3D • New Concepts in Metasurfaces	AW3E • A&T Topical Review on Frequency Comb Spectroscopy: from the VUV to THz I	AW3F • A&T Topical Review on Artificial Intelligence in Material Processing I	SW3G • Nonlinear Processes in Optical Fibers	AW3H • Semiconductor Lasers Technologies	AW3I • Advances in Spectroscopy for Environmental Sensing	FW3J • Quantum Transduction	AW3K • New Algorithms in Optical Diagnostics	SW3L • Lithium Niobate Photonics	FW3M • Methods for Novel Ultrafast Drive Sources and Pump-Probe Spectroscopies	FW3N • Control of Ultrafast Dynamics and Photoinduced Phase Transition	SW3O • RF Device Integration	SW3P • Nanophotonic and Optical Structures	AW3Q • Photonic Biosensors	AW3R • A&T Topical Review on Advances in Optical Neuroimaging I
15:00–16:00	Exhibit Only Hours: 15:00–16:00 Coffee with Exhibits: 15:00–15:30 <i>The Hub</i>																	
16:00–18:00	JW4A • Symposium on Integrated Photonics II	FW4B • Solitons and Frequency Combs II	FW4C • Numerical Design and Modeling of Nanophotonic Systems II	FW4D • Scattering and Diffractive Media	AW4E • A&T Topical Review on Frequency Comb Spectroscopy: from the VUV to THz II	AW4F • A&T Topical Review on Artificial Intelligence in Material Processing II	SW4G • Parametric Processes in Integrated and Solid-state Material Platforms	FW4H • Accelerated Modelling and Photonic Computing	AW4I • Advancing Environmental Sensing with Artificial Intelligence and Machine Learning Methods	FW4J • Analog Quantum Processing & Sensing	AW4K • Optical Material and Device Characterization	SW4L • High-Q Resonators and Combs	FW4M • New Horizons in High-Harmonic and Soft X-ray Sources	FW4N • Exciton Dynamics in vdW Materials	SW4O • Atomic Clocks and Quantum Sensors	SW4P • Light-matter Interactions: Applications	AW4Q • Progress in Bioimaging Methods	AW4R • A&T Topical Review on Advances in Optical Neuroimaging II
18:00–19:00	Conference Happy Hour, <i>Concourse</i>																	

# Agenda of Sessions — Thursday, 11 May

Pacific Daylight Time Zone (PDT)	Executive Ballroom 210A	Executive Ballroom 210B	Executive Ballroom 210C	Executive Ballroom 210D	Executive Ballroom 210E	Executive Ballroom 210F	Executive Ballroom 210G	Executive Ballroom 210H	Meeting Room 211AB	Meeting Room 211CD	Meeting Room 212AB	Meeting Room 212CD	Marriott Salon 1	Marriott Salon 2	Marriott Salon 3	Marriott Salon 4	Marriott Salon 5	Marriott Salon 6
07:30–16:00	Registration																	
08:00–10:00	FTh1A • Cavity QED and its Application	FTh1B • Photon-Phonon Interactions: Optomechanical, Brillouin, and Raman Processes I	FTh1C • Electron-matter Interaction in Plasmonic and Photonic Nanostructures	FTh1D • Exceptional Points and Topological Photonics	FTh1E • Quantum Emitters	STh1F • Novel Material Platforms for Integrated Nonlinear Photonics	STh1G • Hollow-core Fibers	STh1H • Metasurfaces	ATH1I • Multi-Scale Approaches for Environmental Monitoring	STh1J • Microcombs I	ATH1K • Spectroscopy I - Frequency Combs	STh1L • Symposium on Epsilon-Near-Zero Optics: Recent Advancements and Development I	STh1M • THz Beam Forming and Communications	STh1N • Laser-assisted Machining, Fabrication and Synthesis I	STh1O • Materials for Integration	STh1P • Sources I: Fiber	STh1Q • Photonic Crystal and Nanolasers	STh1R • Integrated Electro-optical Modulators
10:00–13:00	<b>Exhibits Hours</b> Exhibit Only Hours: 10:00–13:00 Coffee Break 10:00–10:30 The Hub																	
11:30–13:00	JTh2A • Joint Poster Session III & Lunch (on your own)																	
13:00–15:00	FTh3A. Light matter Interfaces	FTh3B • Photon-Phonon Interactions: Optomechanical, Brillouin, and Raman Processes II	FTh3C • Nanophotonics for Structured Light	FTh3D • Limits of Photonics and Metaoptics	JTh3E • Symposium on Bioinspired Photonics I	STh3F • Photonic-based Computing and Novel Simulation Methods	STh3G • Novel Fiber and Fiber Components Designs	STh3H • Heterogeneous Integration on Silicon	ATH3I • Optical Sensing of Environmental Contaminants	STh3J • Microcombs II	ATH3K • Spectroscopy II - Absorption and Raman	JTh3L • Symposium on Epsilon-Near-Zero Optics: Recent Advancements and Development II	FTh3M • Nonequilibrium Correlation and Quantum Optics	STh3N • Pulse Shaping	STh3O • Lithium Niobate Integration I	STh3P • GHz and Dual-Comb Oscillators and Applications	STh3Q • Ring Lasers and Comb Generation	STh3R • Integrated plasmonics
15:00–15:30	Coffee Break, Concourse																	
15:30–17:30	FTh4A • Quantum Transduction and Interfaces	FTh4B • Optical Thermodynamics and Beam Cleaning	FTh4C • Plasmonic and Nano-optical Tweezing for Sensing and Manipulation	FTh4D • Metasurfaces: Towards Applications	JTh4E • Symposium on Bioinspired Photonics II	STh4F • Integrated Nonlinear Photonics Devices	STh4G • Computational Algorithms in Photonics	STh4H • Optical Computing and Processing	ATH4I • Fiber-Based Approaches for Environmental Sensing	FTh4J • Quantum Dot Sources	STh4K • Optical Ranging & Timing	STh4L • Applications of Frequency Comb Spectroscopy	STh4M • THz Metasurfaces and Nanostructures	STh4N • Laser-assisted Machining, Fabrication and Synthesis II	STh4O • Lithium Niobate Integration II	STh4P • Sources II: Amplifiers	STh4Q • VCSELS	STh4R • Integrated subwavelength metastructures and phased arrays
17:30–19:00	Dinner Break (on your own)																	
19:00–21:00	JTh5A • Joint Postdeadline Paper Presentations																	

# Agenda of Sessions — Friday, 12 May

Pacific Daylight Time Zone (PDT)	Executive Ballroom 210A	Executive Ballroom 210B	Executive Ballroom 210C	Executive Ballroom 210D	Executive Ballroom 210E	Executive Ballroom 210F	Executive Ballroom 210G	Executive Ballroom 210H	Meeting Room 211AB	Meeting Room 211CD	Meeting Room 212AB	Meeting Room 212CD	Marriott Salon 1	Marriott Salon 2	Marriott Salon 3	Marriott Salon 4	Marriott Salon 5	Marriott Salon 6	
07:30–14:30	Registration																		
08:00–10:00	FF1A • Quantum Cryptography 1	FF1B • Nonlinear Processes in Sub-wavelength Systems, 2D materials and Metasurfaces	FF1C • Wavefront Shaping and Sensing with Plasmonic and Photonic Structures	FF1D • Topological Metaoptics	SF1E • Few-cycle Pulses and CEP	SF1F • Machine Learning and DSP in Optical Transmission	FF1G • Ultrafast Dynamics of Collective Excitations	SF1H • Technological Applications of Optical Fibers	SF1I • THz Detection and Spectroscopy	JF1J • Symposium on Solid-State Based Quantum Optics Enabled by Focused Ion Beam Implantation: Applications and Challenges I	SF1K • On-chip coherent light sources	FF1L • Nonlinear Quantum Photonics I	SF1M • Space Division Multiplexing	SF1N • High Power and High Energy Laser Systems	SF1O • Structures for Integration	SF1P • Integrated Modulators	SF1Q • High Power, Long Life Lasers	SF1R • Space Time Wavepackets and Ultrafast Structured Light	
10:00–10:30	Coffee Break, Concourse Level																		
10:30–12:30	FF2A • Quantum Cryptography 2	FF2B • Structured Light and Optical Vortices	FF2C • Quantum Effects in Plasmonics and Nanophotonics	FF2D • Metaoptics for Controlling Emission	SF2E • Novel Optical Devices	SF2F • Microwave Photonics with Frequency Combs	FF2G • Ultrafast Transport and Nano-imaging	SF2H • Fiber Laser	SF2I • THz Near-Field Microscopy and Spintronics	JF2J • Symposium on Solid-State Based Quantum Optics Enabled by Focused Ion Beam Implantation: Applications and Challenges II	SF2K • Novel Modulation Approaches and Applications	FF2L • Nonlinear Quantum Photonics II	SF2M • Access Networks and Systems	SF2N • Novel Laser Materials and Approaches	SF2O • InP Integration	SF2P • Nonlinear photonics	SF2Q • Communication Lasers and Emerging Lasers	SF2R • Dynamics: Oscillators and Applications	
12:30–14:00	Lunch Break (on your own)																		
14:00–16:00	FF3A • Quantum Networking	FF3B • Terahertz, Free Electrons, and X-Rays	FF3C • Fundamentals and Advances in Plasmonics and Nanophotonics	FF3D • Engineered Coupling and Resonance	SF3E • Novel Applications in Integrated Photonics	SF3F • Optical Frequency Comb Spectroscopy from UV to NIR	FF3G • Quantum Dot Photon Sources	SF3H • High Power Fiber Amplifiers	SF3I • THz Generation							SF3J • Integrated Detectors & Spectrometers	SF3K • Visible Light Photonics and Silicon Nitride Platforms	SF3L • Novel Gain, Novel Resonator	