

## PQE XXXVIII Participants

**Amit K. Agrawal**, University of Utah

**Javier Aizpurua**, Donostia Intl. Phys. Ctr., Spain

*“Localised plasmons for resonant surface-enhanced spectroscopy”*

**Eric Akkermans**, The Technion, Israel and Yale University, USA

*“Photon localization and Dicke superradiance in atomic gases: crossover to a ‘small world’ network”*

**Nikola Alic**, University of California San Diego

**Ofir E. Alon**, Heidelberg University

*“Interacting Bose gases: Multi-orbital mean-field and beyond”*

**Esen E. Alp**, Argonne National Laboratory

*“Lattice Dynamics of Nanoscale particles via Inelastic X-Ray Scattering”*

**Boris Altschuler**, Columbia University

*“Optics of electric flows in graphene”*

**Petr Anisimov**, Texas A&M University

*“Dressed state analysis of refractive index enhancement in Raman system – Upper limit estimate”*

**Petr Anisimov**, Texas A&M University

*“Quantum coherence effects in V+Lambda scheme” (poster)*

**Gombojov Ariunbold**, Texas A&M University

*“Distributed Gain in SOS”*

**Gombojov Ariunbold**, Texas A&M University

*“An Experimental Model for Stand Off Sensing” (poster)*

**Markus Aspelmeyer**, Universität Wien

*“Laser-cooling and quantum entanglement of micromechanical systems”*

**Dean Astumiuan**, University of Maine

*“Symmetry relations for trajectories of a Brownian Molecular Machine”*

**Harry Atwater**, California Institute of Technology

*“Coherency in Scattering at Slits and Grooves in Metallic Films: from Young’s Double Slit Experiment to Solar Cells”*

**Robert H. Austin**, Princeton University

*“Ratchets in Biology”*

**Yehuda B. Band**, Ben-Gurion University

*“Interference with Bose-Einstein condensates”*

**Mikhail Belkin**, Harvard University

*“Novel intersubband THz sources for operation above cryogenic temperatures”*

**Mikhail Belkin**, Harvard University

*“High-performance terahertz quantum cascade lasers operating up to 178K” (poster)*

- Alexey Belyanin**, Texas A&M University  
*“Mid/far-infrared photodetectors based on quantum coherence in coupled quantum wells”*
- Robert W. Boyd**, University of Rochester  
*“Advances in Slow and Fast Light”*
- Howard Brandt**, Army Research Laboratory  
*“Differential Geometry of Quantum Computation”*
- Dmitry Budker**, University of California at Berkeley  
*“Crossing the T (and P) and dotting the alpha – some fundamental-symmetry tests at Berkeley”*
- Hrvoje Buljan**, University of Zagreb, Croatia  
*“Nonequilibrium dynamics of 1D Bose gases within the Lieb-Liniger and Tonks-Girardeau models”*
- Hrvoje Buljan**, University of Zagreb, Croatia  
*“Nonequilibrium dynamics of 1D Bose gases within the Lieb-Liniger and Tonks-Girardeau models” (poster)*
- Leonid Butov**, University of California at San Diego  
*“Control of Excitons”*
- Federico Capasso**, Harvard University  
*“Harnessing quantum fluctuations: design, physics, and nanotechnology of Casimir forces and QED torques”*
- Giovanni Carugno**, University of Padua  
*“Dynamic Casimir effect: extracting light from vacuum”*
- Jun-Tao Chang**, Texas A&M University  
*“A new kind of cavity QED: superradiance from a large cloud”*
- Dean Chapman**, University of Saskatchewan  
*“Medical Imaging”*
- Béatrice Chatel**, CNRS-Université Paul Sabatier-Toulouse III  
*“Factoring numbers with ultrashort laser pulses”*
- Gang Chen**, Massachusetts Institute of Technology  
*“Breakdown of Planck’s Blackbody Radiation Law at Nanoscale”*
- Weng W. Chow**, Sandia National Laboratories  
*“Quantum coherence in quantum cascade lasers: paths to THz generation and correlated photon emission”*
- Caleb A. Christensen**, Massachusetts Institute of Technology  
*“Atom interferometry experiments with interacting Bose-Einstein condensates”*
- Laura Cimponeriu**, Potsdam University, Germany  
*“Phase dynamics of coupled oscillators reconstructed from data” (poster)*
- Pierre-François Cohadon**, Laboratoire Kastler Brossel  
*“Experimental optomechanics with silica and silicon mirrors”*
- Leon Cohen**, City University of New York (Hunter College)  
*“Wave propagation in phase space”*

**Erin Craig**, University of Oregon  
*“Model for myosin-V walking mechanism”*

**Erin Craig**, University of Oregon  
*“Model for Myosin-V Walking Mechanism” (poster)*

**Diego Dalvit**, Los Alamos National Laboratory  
*“Engineering Casimir forces with metamaterials”*

**Jon P. Davis**, Naval Air Systems Command

**Michel Devoret**, Yale University  
*“Circuit QED : superconducting atoms” in microwave resonators”*

**Arthur Dogariu**, Princeton University  
*“Real-time Coherent Raman for biological applications”*

**Arthur Dogariu**, Princeton University  
*“Coherent Enhancement in Raman Spectroscopy” (poster)*

**Elizabeth Donley**, NIST - Boulder  
*“Nuclear Magnetic Resonance Gyroscope”*

**Elizabeth Donley**, NIST - Boulder  
*“Chip-Scale Atomic Devices: Clocks, Magnetometers, and Potential New Spinoffs” (poster)*

**Jonathan P. Dowling**, Louisiana State University  
*“Quantum Sensors: The Low Down on High NOON”*

**Geoffrey Duxbury**, University of Strathclyde, Glasgow  
*“Propagation of chirped infrared QC laser pulses through an optically thick minimally damped gas: delayed rapid passage signals in the 8 micron spectrum of acetylene”*

**Sergey Egorov**, Del Mar Photonics, Inc

**Peter Engels**, Washington State University  
*“Quantum hydrodynamics in BECs: From soundwaves to quantum shock”*

**Nader Engheta**, University of Pennsylvania  
*“Metactronics: Metamaterial Nanocircuits and Wireless Elements at Nanoscales”*

**Mark Eriksson**, University of Wisconsin at Madison  
*“Silicon quantum dots as quantum bits”*

**Eric Esarey**, Lawrence Berkeley National Laboratory  
*“GeV electrons from channel-guided laser wakefield accelerators”*

**Vladimir Falko**, Lancaster University  
*“Analogy between p-n junction in graphene and optical metamaterials with negative refraction index”*

**Helen Fielding**, University College, London  
*“Setting the quantum clock: Localisation of Rydberg wave packets in H2”*

**Jason Fleischer**, Princeton University  
*“Optical hydrodynamics”*

**Jim Franson**, University of Maryland at Baltimore County  
*“Beyond Bell’s Inequality”*

**Edward S. Fry**, Texas A&M University

**Ildar Gabitov**, University of Arizona  
*“Slow light in negative refractive index materials”*

**Feruz Ganikhanov**, West Virginia University  
*“High sensitivity vibrational imaging with broadly tunable lasers”*

**Daniel J. Gauthier**, Duke University  
*“Observation of Stored Light via Stimulated Brillouin Scattering”*

**Azriel Genack**, City College of New York  
*“Modes and the statistics of dynamics and speckle evolution”*

**Christopher C. Gerry**, Lehman College, CUNY  
*“Heisenberg Limited Measurements with Coherent States and Weak Kerr Nonlinearities”*

**Gerald Gilbert**, MITRE  
*“Aspects of Practical Remote Quantum Sensing”*

**Bertrand Girard**, LCAR - Université de Toulouse  
*“Wave packet dynamics and interferences in atoms and molecules”*

**Ryan Glasser**, Louisiana State University

**Claire Gmachl**, Princeton University  
*“Mid-Infrared Quantum Cascade Lasers”*

**James Gord**, Wright-Patterson Air Force Base  
*“Propulsion Applications of Femtosecond Sensing”*

**Alex Greilich**, University of Dortmund  
*“Ensemble effects of electron spins in self-assembled quantum dots”*

**Christian Gross**, University of Heidelberg  
*“Entanglement in degenerate Bose gases”*

**Stephane Guerin**, University of Bourgogne  
*“Optimizing field-free molecular alignment by designed laser pulses”*

**Gerald Gwinner**, University of Manitoba  
*“Towards studies of fundamental symmetries with francium atoms in an on-line laser trap”*

**Gerald Gwinner**, University of Manitoba  
*“Test of relativistic time dilation with fast optical atomic clocks at different velocities” (poster)*

**Kohzo Hakuta**, University of Electro- Communications, Japan  
*“Single Atoms on an Optical Nanofiber”*

**Naomi Halas**, Rice University

*“Physics and applications at the ‘hot’ metal-molecule interface”*

**Dennis G. Harris**, The Boeing Co.

**Jack Harris**, Yale University

*“Strong dispersive coupling of an optical cavity to a micromechanical resonator”*

**John Harvey**, University of Auckland

*“Everything you always wanted to know about vector FWM in fibers”*

**Mark Havey**, Old Dominion University

*“Time-dependent light and atomic dynamics in high-density, ultra-cold atomic Rb vapor”*

**Philip Hemmer**, Texas A&M University

*“Sub-wavelength single-molecule imaging using quantum optics”*

**James Higbie**, University of California at Berkeley

*“New Directions in Magnetometry using Nonlinear Magneto-optical Rotation”*

**John Howell**, University of Rochester

*“Slow and Stopped Images”*

**Randall G. Hulet**, Rice University

*“Experiments with Ultracold Atomic Fermions at the BEC-BCS Crossover”*

**Sean Huver**, Louisiana State University

**Kenichi Ishikawa**, The University of Tokyo

*“Wavelength-dependence of high-harmonic generation”*

**Philippe Jacquod**, University of Arizona

*“Capturing quantum coherence with classical mechanics: The semiclassical approach to mesoscopic physics”*

**Ian Johnson**, Paul Scherrer Institute

*“Coherent X-rays for Imaging and Dynamic Scattering”*

**Robin Kaiser**, CNRS, France

*“Coherent wave transport and gain in a large cloud of cold atoms”*

**Robin Kaiser**, CNRS, France

*“Mechanical Effects of Multiple scattering of light in cold atoms: from MOT densities to plasma physics” (poster)*

**Henry C. Kapteyn**, University of Colorado at Boulder

*“Probing molecular dynamics using ultrafast x-rays”*

**Michael M. Kash**, Lake Forest College

*“Pulse Catch-up in SOS”*

**Masayuki Katsuragawa**, University of Electro- Communications, Japan

*“Octave-spanning Raman comb generation with absolute phase control”*

- Moochan Kim**, Texas A&M University  
*“Master equations for quasiprobability function in BEC system”*
- Moochan Kim**, Texas A&M University  
*“Derivation of master equations of quasiprobability functions in BEC system” (poster)*
- Olga Kocharovskaya**, Texas A&M University  
*“Atomic and Nuclear Coherence Effects in Solids”*
- Vitaly Kocharovsky**, Texas A&M University  
*“BEC: Beyond Gibbs and Wick Perturbation Theory”*
- Norbert Kroó**, Hungarian Academy of Sciences  
*“Nonlinear Plasmonics”*
- Karl Krushelnick**, University of Michigan  
*“Compact Laser Plasma Accelerators”*
- Andy Kung**, Academia Sinica, Taiwan  
*“Recent progress in single-cycle to sub-cycle optical pulse generation by the Raman technique”*
- Gershon Kurizki**, Weizmann Institute of Science, Israel  
*“How far can we push the quantum - classical boundary”*
- Hwang Lee**, Louisiana State University  
*“Sub-Shot Noise Optical Interferometry”*
- M. Howard Lee**, University of Georgia  
*“Birkhoff’s theorem and Ergometer: A meeting of two cultures”*
- Dietrich Leibfried**, NIST, Boulder  
*“Quantum information processing with trapped atomic ions”*
- Kathy Levin**, University of Chicago  
*“Novel States of Matter in Ultracold Fermi Gases”*
- Robert J. Levis**, Temple University  
*“Ultrafast, Laser-Generated Filament Plasma-Dynamics as Probed by Femtosecond Box-CARS”*
- Hebin Li**, Texas A&M University  
*“Enhancement of imaging contrast via EIT” (poster)*
- Natasha Litchinitser**, SUNY, Buffalo  
*“From Positive- to Negative-Index Materials: Transitional Phenomena”*
- Vladimir A. Lobastov**, California Institute of Technology  
*“Ultrafast structural dynamics with electron microscopy”*
- Marko Loncar**, Harvard University  
*“Optomechanical interaction in nanophotonic devices”*
- Pat Loughlin**, University of Pittsburgh  
*“A Wigner approximation to wave propagation in a random medium”*

- Vadim V. Lozovoy**, Michigan State University  
*“Single beam CARS with pseudorandom phase modulated femtosecond pulses”*
- Robert P. Lucht**, Purdue University  
*“Theory of Femtosecond CARS for Single-Laser-Shot, High-Rep-Rate Gas-Phase Measurements”*
- Mikhail D. Lukin**, Harvard University  
*“Quantum optics meets nanoscience”*
- Stephen A. Lyon**, Princeton University  
*“Enhancing coherence of semiconductor-based quantum bits”*
- Dongxia Ma**, Texas A&M University  
*“Bohr model with nearest atom quantization”*
- Dongxia Ma**, Texas A&M University  
*“Bohr model with nearest atom quantization” (poster)*
- Stefan Maier**, Imperial College, London (UK)  
*“Plasmonics throughout the spectrum: Sub-wavelength energy localization from the visible to the THz regime”*
- Anatoly Maksimchuk**, University of Michigan  
*“High-energy electron acceleration in laser wakefields”*
- Svetlana Malinovskaya**, Stevens Institute of Technology  
*“Control of Raman transitions in CARS spectroscopy using chirped pulses (theory)”*
- Neil Manson**, Australian National University  
*“Properties of the nitrogen-vacancy center color in diamond for quantum information processing”*
- Florian Marquardt**, Ludwig-Maximilians-Universität, Munich  
*“Quantum theory of optomechanical cooling”*
- Eric Mazur**, Harvard University  
*“Nonlinear optics at the nanoscale”*
- Colin McKinstrie**, Bell Laboratories, Alcatel-Lucent  
*“Parametric processes in fiber-based devices and systems”*
- Alan Migdall**, NIST Gaithersburg  
*“Fiber-based source of photon pairs”*
- David A. B. Miller**, Stanford University  
*“Fundamental limit to nanophotonic and slow light components”*
- Graeme Milton**, University of Utah  
*“Electromagnetic circuits”*
- David Moncton**, Massachusetts Institute of Technology  
*“Integrating Laser and Linac Technology for Next Generation X-ray Sources”*
- Warren Mori**, University of California at Los Angeles  
*“A path towards 10-100 GeV LWFA stages”*

**Erich J. Mueller**, Cornell University

*“Probes of pairing in strongly interacting Fermi gases – what can we learn from spectroscopy?”*

**Terry Mullins**, Albert-Ludwigs-Universität Freiburg

*“Coherent transients in the photoassociation of ultracold atoms by femtosecond pulses”*

**Jeremy Munday**, Harvard University

*“Measurement of the Casimir force in fluids: from attraction to repulsion”*

**Kater Murch**

**Margaret Murnane**, University of Colorado at Boulder

*“Molecular Recollision Interferometry using High Harmonic Generation for Probing Molecular Structure and Dynamics”*

**Takashi Nakajima**, Kyoto University

*“Phase- and chirp-dependent excitation and ionization”*

**Frank A. Narducci**, Naval Air Systems Command

*“Progress towards an atom interferometer gradient magnetometer”*

**Evgenii Narimanov**, Purdue University

*“The Hyperlens: From Meta-Materials to Meta-Devices”*

**Evgenii Narimanov**, Purdue University

*“The Hyperlens: From Meta-Materials to Meta-Devices” (poster)*

**Paul Narum**, The Norwegian Defence Research Establishment

*“Fast and slow light - What are the fundamental limitations and what does it actually mean?”*

**Mikhail Noginov**, Norfolk State University

*“Nanoplasmonics with gain: From low loss to lasing”*

**Peter Nordlander**, Rice University

*“Plasmonic Nanostructures: Artificial molecules”*

**Lukas Novotny**, University of Rochester

*“Enhancing light-matter interactions with optical antennas”*

**Kenji Ohmori**, Institute for Molecular Sciences, Okazaki

*“Tailoring Picometric Quantum Carpets by Controlling Ultrafast Wave-Packet Interference”*

**Silke Ospelkaus**, JILA, UC Boulder, and University of Hamburg

*“Fermi-Bose-Mixtures in 3D Optical Lattices”*

**Silke Ospelkaus**, JILA and University of Colorado at Boulder

*“Collisional Stability of Fermionic Feshbach Molecules” (poster)*

**Domenico Pacifici**, California Institute of Technology

*“Plasmons in slit and hole arrays: implications of coherence and short range order for modulators and solar cells”*

**Willie Padilla**, Boston College

*“Metamaterials for Novel Devices”*



**Anil Patnaik**, Wright-Patterson Air Force Base

*“Coherent repumping assisted immunity of Raman coherence to rapid collisional decays”*

**Anil Patnaik**, Wright-Patterson Air Force Base

*“Insensitivity of Electronic-Resonance-Enhanced Coherent Anti-Stokes Raman Scattering (ERE-CARS) to Collisions” (poster)*

**Anil Patnaik**, Wright-Patterson Air Force Base

*“Coherent control of chi-3 process in a double ladder system” (poster)*

**Dipali Patnaik**

**John Pendry**, Imperial College

*“Progress in Metamaterials - an Overview”*

**Dmitry Pestov**, Texas A&M University

*“Ultrafast Coherent Raman Spectroscopy: Hybrid Technique and Its Applications”*

**Thomas Pfeifer**, University of California at Berkeley, and LBNL

*“Sub-cycle ionization gating of high-harmonics and attosecond XUV spectral interferometry”*

**Thomas Pfeifer**, University of California at Berkeley, and LBNL

*“Attoscience at Berkeley: Controlled Attosecond Pulse Generation and Absolute-Phase Spectroscopy of Electron Dynamics” (poster)*

**Bill Plick**, Louisiana State University

**Peter Rabl**, Harvard University

*“Hybrid Quantum Computing with Polar Molecules”*

**Mark Raizen**, University of Texas at Austin

*“Comprehensive Control of Atomic and Molecular Motion”*

**Ernst Rasel**, Universität Hannover

*“Gauss sum factorization with cold atoms”*

**Ana Maria Rey**, ITAMP

*“Cat state production with ultracold bosons in rotating ring superlattices”*

**Matteo Rini**, Lawrence Berkeley Lab

*“Ultrafast Studies of Phase Transition Dynamics in Correlated Electron Systems”*

**Jean-François Roch**, ENS Cachon

*“Single color centers in nanodiamonds”*

**Yuri Rostovtsev**, Texas A&M University

*“XUV via coherent Raman superradiance 2: computational results”*

**Russell Chipman**, University of Arizona

**Mark Saffman**, University of Wisconsin at Madison

*“Excitation and interaction of Rydberg atoms for quantum bits and quantum registers”*

**Laurent Sanchez-Palencia**, Institut d’optique, Palaiseau

*“Anderson localization in interacting Bose gases”*

- Robin Santra**, Argonne National Laboratory  
*“Strong-field control of x-ray absorption”*
- Robin Santra**, Argonne National Laboratory  
*“An X-Ray Probe of Orbital Alignment in Strong-Field Ionization” (poster)*
- Zoe-Elizabeth Sariyanni**, University of California at Irvine  
*“Applications of Femtosecond Coherent Raman Spectroscopy”*
- Vladimir A. Sautenkov**, Texas A&M University  
*“Control of electromagnetically induced transparency by field phase”*
- Anatoliy Savchenkov**, OEwaves, Inc.  
*“Frequency references based on four-wave mixing in crystals”*
- Wolfgang Schleich**, Universität Ulm  
*“Factorization of numbers with classical and quantum interference”*
- Marlan O. Scully**, Texas A&M and Princeton University  
*“XUV via coherent Raman superradiance 1: concepts and analysis”*
- Tamar Seideman**, Northwestern University  
*“New Directions in Nonadiabatic Alignment. From Ultrafast Switches to Guided Molecular Assembly”*
- Tamar Seideman**, Northwestern University  
*“On the information content of high harmonics generated from aligned molecules” (poster)*
- Tamar Seideman**, Northwestern University  
*“Laser induced torsional alignment and control of charge transfer events” (poster)*
- Alexey Sergeev**, Texas A&M University
- Selim Shahriar**, Northwestern University  
*“A Fast-Light Augmented Zero-Area Active Sagnac Interferometer for Enhanced Strain Sensitivity AC-Coupled Gravitational Wave Detection”*
- Vladimir M. Shalaev**, Purdue University  
*“Controlling Light with Metamaterials”*
- Yanhua Shih**, University of Maryland at Baltimore County  
*“The physics of ghost imaging”*
- Gennady Shvets**, University of Texas at Austin  
*“Plasmonic Metamaterials: superlenses, hyperlenses, and negative index materials”*
- David Smith**, Duke University  
*“Inhomogeneous Metamaterials: From Gradient Index to Transformation Optics”*
- Igor Smolyaninov**, University of Maryland  
*“Novel nanophotonic devices based on plasmonic metamaterials”*
- Alexei Sokolov**, Texas A&M University  
*“Toward sub-cycle field shaping by molecular modulation in gasses and solids: Raman coherence at work”*

- Nikolai Stelmakh**, University of Texas at Arlington  
*“Spatial mode multiplexing of lasers beams”*
- Nikolai Stelmakh**, University of Texas at Arlington  
*“Dynamic breaking as a boundary between bad and good skiers” (poster)*
- Mark Stockman**, Georgia State University  
*“Ultrafast Controlled Nanoplasmonics”*
- Stojan Radic**, University of California at San Diego
- Gottfried Strasser**, SUNY, University at Buffalo  
*“Recent results on GaAs-based Quantum Cascade lasers”*
- Szymon Suckewer**, Princeton University  
*“Femtosecond Laser for Eye Surgery”*
- Qingqing Sun**, Texas A&M University  
*“Lamb shift due to Surface Plasmon Polaritons modes” (poster)*
- Dieter Suter**, Universität Dortmund  
*“Factorizing numbers with the Gauss sum technique: NMR implementations”*
- Anatoly Svidzinsky**, Texas A&M University  
*“Hybrid approach to fluctuations in mesoscopic interacting Bose-Einstein condensate”*
- John Thomas**, Duke University  
*“Is a Strongly Interacting Fermi Gas a Perfect Fluid?”*
- Mankei Tsang**, California Institute of Technology  
*“Wave, Particle, and Fluid Properties of light”*
- Alfred U’Ren**, CICESE  
*“Tailored photon-pair generation in fibers”*
- Eric W. Van Stryland**, CREOL & FPCE, University of Central Florida  
*“White-Light Continuum Z-scan Nonlinear Optical Spectroscopy”*
- Michael Vasilyev**, University of Texas at Arlington  
*“Phase-sensitive amplification in fibers”*
- Konstantin Vodopyanov**, Stanford University  
*“New Light from GaAs”*
- Ron Walsworth**, Harvard-Smithsonian Center for Astrophysics  
*“Astro-comb: revolutionizing precision spectroscopy in astrophysics”*
- Haohua Wang**, University of California at Santa Barbara  
*“High fidelity gates in Josephson junction qubits”*
- Xi Wang**, Texas A&M University  
*“Hybrid CARS on Glucose Detection” (poster)*

**Martin Wegener**, Universität Karlsruhe (TH)  
*“Recent Progress on Photonic Metamaterials”*

**David S. Weiss**, Pennsylvania State University  
*“Interacting atoms in optical lattices”*

**George R. Welch**, Texas A&M University  
*Welcoming Remarks*

**George R. Welch**, Texas A&M University  
*“Subwavelength imaging via dark states”*

**Herbert Winful**, University of Michigan  
*“A resolution of the tunneling time conundrum”*

**Hui Xia**, Princeton University  
*“Coherent excitation in Raman Spectroscopy”*

**Hui Xia**, Princeton University  
*“Coherent excitation in Raman Spectroscopy” (poster)*

**Vladislav Yakovlev**, University of Wisconsin at Milwaukee  
*“Probing biochemical interactions in microfluidic devices using nonlinear optical spectroscopy”*

**Deniz Yavuz**, University of Wisconsin at Madison  
*“Molecular modulation with continuous-wave laser beams”*

**Susanne Yelin**, University of Connecticut  
*“Negative index of refraction with atomic coherence”*

**Linda Young**, Argonne National Laboratory  
*“Control of x-ray processes using laser-aligned molecules”*

**Clare Yu**, University of California at Irvine  
*“The Transportation System Inside a Living Cell”*

**Nan Yu**, NASA Jet Propulsion Laboratory  
*“Whispering gallery mode resonator thermal limits and stabilization”*

**Nikolay Zheludev**, The University of Southampton  
*“Close mode resonances in photonic meta-materials”*

**Wenqi Zhu**, University of Utah