DARRICK CHANG CURRICULUM VITAE MARCH 2025

BASIC INFORMATION

Mailing address
ICFO – The Institute of Photonic Sciences
Mediterranean Technology Park
Av. Carl Friedrich Gauss, 3
08860 Castelldefels (Barcelona), Spain

Phone: +34 935534178
Email: darrick.chang@icfo.eu
Citizenship: USA

CAREER HISTORY

ICREA Research Professor at ICFO 1/2018-present
Institució Catalana de Recerca i Estudis Avançats (ICREA)
Professor and group leader, Theoretical Quantum Nanophotonics 6/2017-present
Institut de Ciencies Fotoniques (ICFO)
Assistant professor and group leader, Theoretical Quantum Nanophotonics 10/2011-6/2017
Institut de Ciencies Fotoniques (ICFO)
Postdoctoral fellow, Institute for Quantum Information 9/2008-10/2011
California Institute of Technology
Fulbright Fellow 9/2001-6/2002
Physics Department, University of Turku, Finland

EDUCATION

Ph.D. in Physics, Harvard University 9/2002-6/2008
Advisor: Mikhail Lukin
Thesis: *"Controlling atom-photon interactions in nano-structured media"*
B.S., with Distinction, in Physics, Stanford University 9/1997-6/2001

VISITING POSITIONS

Visiting Fellow 2/2016-3/2016
JILA, University of Colorado at Boulder
Visiting professor 3/2015
Laboratoire de Physique des Lasers (LPL), Université Paris 13

AWARDS

Outstanding referee for the American Physical Society 2017
NEST Fellowship 2011
Fundacio Privada Cellex Barcelona
Postdoctoral Fellowship 9/2008-10/2011
Center for the Physics of Information, California Institute of Technology
National Science Foundation Graduate Fellowship 2002-2005
Fulbright Fellowship 2001-2002

TEACHING

Master in Photonics Program (Universitat Politecnica de Catalunya) 2022-2025
Quantum light-matter interfaces

ICFO 2016,2017
Short course (8 hours of lectures) – Atomic Physics Meets Nanophotonics
ICFO 2012-2015
Lecturer for short courses in Theoretical Photonics, Nanophotonics, and Experimental Quantum Optics
California Institute of Technology Summer 2010
Research mentor for Summer Undergraduate Research Fellowship (SURF) program
Harvard University Fall 2005
Teaching fellow for Physics 285b: Modern Atomic and Optical Physics II
Stanford University 1999-2000
Undergraduate resident tutor in math and physics

AWARDED GRANTS

Photon-Atom Nonlinearities and Deterministic Applications via Arrays (PANDA) 11/2023-10/2027
Principal Investigator
Horizon Europe, EIC Pathfinder Challenges, 239,000 Euros
Consortium: 5 partners, 3.98 million Euros total budget

SGR Grup de Recerca 1/2022-7/2025
Funded by Generalitat de Catalunya AGAUR, 40,000 Euros

Quantum simulation with engineered dissipation (QuSiED) 4/2022-3/2025
Principal Investigator
European Union Horizon 2020, QuantERA, 85,000 Euros
Consortium: 6 partners, 970,000 Euros total budget

A new spin on quantum atom-light interactions (NEWSPIN) 6/2021-5/2026
ERC Consolidator Grant, 1.9 million Euros

Enhancing quantum nonlinear optics with atomic arrays (ENHANCE) 12/2020-11/2022
Principal Investigator
Spain MICINN Europa Excelencia Project EUR2020-112155, 60,000 Euros

Disruptive Approaches to Atom-Light Interfaces (DAALI) 10/2020-9/2024
Scientific Coordinator and Principal Investigator
European Commission, FET-Open Project, 350,000 Euros
Consortium: 8 partners, 3.0 million Euros total budget

Atom-light interactions as a quantum spin model (ALIQS) 1/2019-5/2022
Spain Plan Nacional-Excelencia Project PGC2018-096844-B-I00, 121,000 Euros

Control de formaciones de átomos ultrafrios: una nueva plataforma para las tecnologías cuánticas (CODEC) 1/2019-12/2021
Principal Investigator
Fundación Ramon Areces
22,000 Euros
Consortium: 2 partners, 130,000 Euros total budget

Quantum Internet Alliance (QIA) 10/2018-9/2021
European Quantum Flagship, 80,000 Euros
Consortium: 22 partners, 10 million Euros total budget

Realistic Quantum Simulators: Catalan Efforts (QuantumCAT) 1/2018-6/2022
Principal Investigator
Funded by Generalitat de Catalunya, 100,000 Euros
Consortium: 13 partners, 2 million Euros total budget

SGR Grup de Recerca 2017-9/30/2021
Funded by Generalitat de Catalunya AGAUR, 33,000 Euros

Photonic Quantum Matter 2017-2021

Foreign Collaborator
United States Air Force Office of Scientific Research MURI Program
Consortium: 8 PI's, 7.5 million USD total budget

Novel nanoscale traps for atoms and dielectric particles (NANOTRAP) 9/2015-8/2017
Spain MINECO Explora Ciencia Program, 48,000 Euros

Quantum Opto-Mechanics with Atoms and Nanostructured Diamond (QOMAND) 2015-2019
Foreign collaborator
United States Office of Naval Research MURI Program
Consortium: 8 PI's and 3 foreign collaborators, 7.5 million USD total budget

Controlling atoms with nanophotonic systems (CANS) 1/2015-12/2017
Spain MINECO Plan Nacional Project FIS2014-58419-P, 50,000 Euros

Frontiers of Quantum Atom-Light Interactions (FoQAL) 3/1/2015-
ERC Starting Grant, 1.4 million Euros 2/29/2020

SGR Grup de Recerca Emergent 2014-2016
Generalitat de Catalunya AGAUR, 21,500 Euros

Graphene-Based Single-Photon Nonlinear Optical Devices (GRASP) 2014-2017
Scientific coordinator and Principal Investigator
European Commission, FET-Open XTrack Project 613024, 230,000 Euros
Consortium: 6 partners, 2.0 million Euros total budget

Europa Excelencia grant 2014
Spain MINECO, 75,000 Euros

Ramon y Cajal fellowship 2013-2016
Spain MINECO, 175,000 Euros

Quantum Interface between Atomic and Nanophotonic Systems (ATOMNANO) 8/1/2012-
European Commission, Marie Curie Career Integration Grant 322111, 100,000 Euros 7/31/2016

CURRENT GROUP MEMBERS

Postdocs	**Start date**
Alexander Poshakinskiy – *Beatriu Pinos Fellowship*	2023
Lorenzo Rossi	2023
Blazej Jaworowski – *Marie Curie Fellowship*	2023
Charlie-Ray Mann – *Marie Curie Fellowship*	2021

PhD students	
Mark Oehlgrien – *ICFO Flight PhD Fellowship*	2023
Panagiotis Tselifis – *ICFO Severo Ochoa Excellence Fellowship*	2023
Lukas Wangler – *Joan Oró Fellowship (Catalan government)*	2022
Teresa Karanikoloau – *Enlighten ICFO PhD Fellowship*	2021

FORMER MEMBERS

Postdocs	**Date**
Francesco Andreoli	2023-2024
Daniel Hümmer – *Marie Curie Fellowship*	2021-2023
Gian Marcello Andolina	2021-2022
Current: Postdoc, College de France	
Giuseppe Calajò – *Marie Curie Fellowship*	2019-2022
Current: Postdoc, Univ. Padova	
Zhaozhe (David) Li	2016-2021
Robert Bettles – *Cellex ICFO-MPQ Postdoctoral Fellowship*	2018-2020
Current: Scientific Developer, Genomics plc	
Nikos Fayard	2018-2020
Current: Postdoc, Institut d'Optique	
Loïc Henriet	2016-2019
Current: co-CEO, Pasqal	
Ana Asenjo Garcia – *Marie Curie Fellowship*	2014-2018
Current: Assistant professor, Columbia University	
Previous: Caltech IQIM Postdoctoral Fellow	
Andreas Albrecht	2015-2018
Current: Development engineer, Diehl Group	
Mariona Moreno Cardoner	2015-2018
Current: Lecturer, University of Barcelona	
Previous: Erwin Schrodinger Center for Quantum Science and Technology Postdoctoral Fellow (Austria)	
James Douglas	2012-2017
Current: Co-founder and CTO, meetoptics.com	
Tommaso Caneva	2012-2015
Current: Head of Data, Glovo	
Marinko Jablan – *NEWFELPRO (Croatian and Marie Curie) Fellowship*	2013-2015
Current: Assistant professor, University of Zagreb	
Hessam Habibian –*Juan de la Cierva Fellowship*	2013-2015
Current: Co-founder, Sana Meditech	
Christine Muschik – *Humboldt Fellowship*	2011-2014
(co-supervised with Prof. Maciej Lewenstein)	
Current: Assistant professor, Institute for Quantum Computing, University of Waterloo	

PhD students

Daniel Goncalves Romeu – *Catalonia FI-DGR PhD Fellowship* 2019-2024
Thesis: "Novel approaches for quantum technologies with atoms and photons in free space"
Francesco Andreoli – *ICFOstepstone PhD Fellowship* 2018-2023
Thesis: "Multiple light scattering in atomic media: from metasurfaces to the ultimate refractive index"
Stefano Grava 2017-2022
Thesis: "Novel quantum interactions between light and dense atomic media"
Javier Argüello Luengo – *La Caixa PhD Fellowship* 2018-2022
Thesis: "Synthetic quantum matter using atoms and light" – Thesis Prize 2022 of the Spanish Royal Society of Physics (Atomic and Molecular Physics division)
Lukas Neumeier – *Severo Ochoa PhD Fellowship* 2014-2018
Thesis: "Novel regimes of quantum optomechanics"
Marco Manzoni – *La Caixa – Severo Ochoa International Fellowship* 2013-2017
Thesis: "New systems for quantum nonlinear optics" – ICFO Thesis Prize 2018

Masters students
Tomás Levy-Yeyati Franzé 2023
Thesis: "Generating non-classically correlated photon states through collective dissipation"
Roberto Tricarico (co-advisor, along with Prof. Lorenzo Marrucci) 2021
Thesis: "An advanced study on the transient dynamics in Rydberg-EIT atomic clouds"
Current: Scuola Superiore Meridionale Postdoctoral Fellow
Maria Rodriguez Losada 2020
Thesis: "Observing subradiant dynamics in atomic arrays"
Daniel Goncalves Romeu 2019
Thesis: "Quantum photon correlations at the single-atom level in free space"
Albert Franquet Gonzalez 2013
Thesis: "Preparation of entangled Dicke states using atomic ensembles"
Arkabrata Bhattacharya 2012
Thesis: "Quantum nonlinear optics with a single atom"

Undergraduate summer fellows
Misael Malqui Cruz 2022
Lisa Bombieri 2022
Maria Flors Mor Ruiz 2021
Cristian Tabares Lopez 2021
Bennet Windt 2021
Jaime Redondo Yuste 2019
Sergi Julia Farre 2016
Javier Argüello Luengo 2015
Eloi Marin Amat 2012

INVITED TALKS

2025

"Many-Body Quantum Optics: Jeff Kimble's Vision for the Future," *APS Global Physics Summit*, Anaheim, CA, USA, March 19
"Emergence of quantum spin liquids from cavity QED," *AMO-QIS Seminar*, Columbia University, USA, March 12

2024

"Quantum optics with atom arrays: From efficient photon gates to quantum spin liquids," *Q-FARM seminar*, Stanford University, USA, Dec. 4
"Many-body quantum optics," *KITP Blackboard Lunch Talk*, Santa Barbara, USA, Nov. 25
"A new spin on atom-light interactions," Balleroy Workshop on Quantum Devices, Balleroy, France, Sept. 6
"Quantum spin liquids with atom-light interactions," *GRC Quantum Science*, Easton, MA, USA, July 30
"Topological spin liquids in cavity QED," *ICFO Summer Lecture Series*, ICFO, Barcelona, July 23
"Quantum optics with atom arrays," *Quantum Information Spring School: Photonic Quantum Technologies*, Les Houches, France, May 23
"Topological spin liquids in cavity QED," *Cavity control of quantum materials*, DESY, Hamburg, May 17
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *Quantum Optics 2024*, Obergurgl, Austria, February 28
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *seminar*, Jozef Stefan Institute, Ljubljana, Slovenia, February 15

2023
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *Quantum Systems in Noronha*, Fernando de Noronha, Brazil, November 14
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *seminar*, Joint Quantum Institute, University of Maryland, October 16
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *CALI 2023*, Crete, October 3
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *seminar*, Max Planck Institute of Quantum Optics, Garching, Germany, September 28
"A new spin on quantum atom-light interactions," *School on Emergent Phenomena in Non-Equilibrium Quantum Many-Body Systems*, ICTP-SAIFR, Sao Paulo, Brazil, June 26-30
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *Young Atom Opticians conference*, ICFO, Barcelona, June 16
"Quantum optics with atomic arrays," *SPICE Conference on Quantum Spinoptics*, Ingelheim, Germany, June 13
"Quantum optics using atomic arrays," *seminar*, IST Austria, May 23
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *colloquium*, Vienna Center for Quantum Science and Technology, May 22
"Exploring many-body phenomena in waveguide QED," *IMEC seminar*, Leuven, Belgium, May 4
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *colloquium*, University of Geneva, Switzerland, April 24
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *Quantum Control of Light,* Bad Honnef, Germany, March 29
"Quantum nonlinear optics using 2D Rydberg atom arrays," *APS March Meeting*, Las Vegas, USA, March 7

2022
"The maximum refractive index of optical materials – from quantum optics to quantum chemistry," *QuCoLiMa seminar*, Johannes Gutenberg University, Germany, Dec. 13
"Quantum optics using atomic arrays," *14th Italian Quantum Information Science Conference*, Palermo, Sept. 15
"Quantum optics using atomic arrays," *SPICE workshop on Non-Equilibrium Emergence in Quantum Design*, Germany, June 23
"Why is refractive index so small? From quantum optics to quantum chemistry," *seminar*, Weizmann Institute, Israel, June 14
"Quantum optics using atomic arrays," *tutorial*, Weizmann Institute, Israel, June 12
"Atom arrays – a novel platform for quantum atom-light interfaces," *QTEdu Open Master seminar*, May 13 (online)
"Is an ultrahigh refractive index possible? From quantum optics to quantum chemistry," *QUENOCOBA workshop*,

Max Planck Institute for Quantum Optics, Germany, March 1
"The ultimate limits to refractive index – from quantum optics to quantum chemistry," *seminar,* Columbia University, February 8

2021
"The ultimate limits to refractive index – from quantum optics to quantum chemistry," *Aspen Many-Body Cavity QED*, Aspen Center for Physics, USA, December 8
"The ultimate limits to refractive index – from quantum optics to quantum chemistry," *seminar* (online), Instituto de Fisica de Sao Carlos, November 30
"The ultimate limits to refractive index – from quantum optics to quantum chemistry," *Hy-Q seminar*, Niels Bohr Institute, Copenhagen, November 29
"The ultimate limits to optical refractive index," *3D Nano Assembly for Photonics Workshop* (online), Sept. 14
"Quantum optics using atomic arrays," *seminar*, Quantum Research Centre, Abu Dhabi, United Arab Emirates (online), Sept. 13
"Atom-light interfaces: a quantum multiple scattering perspective," *Fudan University Summer School on Optical Physics*, July 12-13
"Quantum optics using atomic arrays," *QuCoLiMa seminar* (online), June 8
"Quantum optics using atomic arrays," *NONGAUSS workshop* (online), May 18
"Photonic quantum information processing using atomic arrays," *ErBeStA workshop* (online), May 4
"Quantum optics using atomic arrays," *Colloquium*, Center for Complex Quantum Systems, Aarhus University, Denmark (online)

2020
"Atom-light interfaces: a quantum multiple scattering perspective," *Les Houches School on Quantum Technologies with Light and Matter*, Les Houches, France
"The maximum refractive index of an atomic medium," *METANANO 2020* (online)
"The maximum refractive index of an atomic medium," *Quantum Science Seminar* (online)
"Quantum nonlinear optics using 2D atomic arrays," *seminar*, Max Planck Institute for Quantum Optics, Munich, Germany

2019
"The maximum refractive index of an atomic medium," *Atoms and Photons*, Nice, France
"Interfacing atoms with nanophotonic systems," *Guest lectures*, Fudan University, Shanghai, China
"Re-thinking the possibilities of quantum atom-light interfaces," *Colloquium*, Fudan University, Shanghai, China
"The maximum refractive index of an atomic medium," *BEC 2019*, Sant Feliu, Spain
"The maximum refractive index of an atomic medium," *Conference on Nanophotonics: Foundations and Applications*, Monte Verita, Switzerland
"Quantum optics using atomic arrays," *SPIE Optics + Photonics*, San Diego, USA
"Re-visiting our understanding of atom-light interactions," *International Workshop on Perspectives in Theoretical Physics*, Hamburg, Germany
"Re-thinking the potential power of atom-light interfaces," *Zurich Physics Colloquium*, ETH Zurich, Switzerland
"Many-body dynamics in a 1D optical lattice clock," *Workshop on Quantum Emitters in Non-Conventional Baths,* Max Planck Institute for Quantum Optics, Munich, Germany

2018
"Quantum optics using atomic arrays," *Colloquium,* Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
"Quantum optomechanics with levitated particles and single atoms," *INAOE Quantum Optics School*, Cholula, Mexico
"Quantum optics using ordered atomic arrays," *Colloquium*, Max Planck Institute for Quantum Optics, Garching,

Germany
"Quantum optics using atomic arrays," *Hybrid Approaches to Quantum Information Processing*, Copenhagen
"Open critical dynamics in a one-dimensional optical lattice clock," *Workshop on Quantum Simulations with Atoms and Light*, Aarhus, Denmark
"Quantum optics using ordered atomic arrays," *26th International Conference on Atomic Physics*, Barcelona
"Simulating quantum light propagation through atomic ensembles using matrix product states," *1st Workshop on Waveguide QED,* Mazara del Vallo, Italy
"Atom light interactions as a quantum spin model," *seminar, Laboratoire Photonique, Numerique et Nanosciences*, Bordeaux, France
"Simulating quantum light propagation through atomic ensembles using matrix product states," *25th Central European Workshop on Quantum Optics*, Palma, Spain
"Quantum optics using atomic arrays," *seminar, Institute for Molecular Engineering*, University of Chicago
"Open critical dynamics in an optical lattice clock," Workshop on *Novel Paradigms in Many-Body Physics from Open Quantum Systems*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
"Quantum optics using atomic arrays," *International Conference on Quantum Optics*, Obergurgl, Austria
"Quantum optics using atomic arrays," *BCN Annual Cold Atoms Meeting*, Barcelona
"Atom-light interactions as a quantum spin model," *Workshop on Numerical Methods in Quantum Optics*, Max Planck Institute for Astrophysics, Garching, Germany

2017
"Interfacing atoms with nanophotonic systems," *Les Houches Predoctoral School on Nano & Quantum Optics*, Les Houches, France
"Interfacing atoms with nanophotonic systems," *CoQuS and IMPRS-QST Summer School on Complex Quantum Systems*, Vienna
"A quantum spin model of atom-light interactions," *EPFL School on Recent Trends in Light-Matter Interaction*, Lausanne, Switzerland
"Quantum many-body states of atomic spin and motion," *Physics and Applications of Nanoelectronic and Nanomechanical Systems*, Pyeongchang, South Korea
"Exponential improvement in photon storage fidelities using subradiance and selective radiance in atomic arrays," *Workshop on Open Quantum Systems*, International Centre for Theoretical Sciences, Bengaluru, India
"Quantum optics using two-dimensional atomic arrays," *seminar, Joint Quantum Institute*, University of Maryland, USA
"Exponential improvement in photon storage fidelities using atoms coupled to an optical nanofiber," *OSA Incubator on Integrated Semiconductor Quantum Photonic Devices*, Washington, DC
"Exponential improvement in photon storage fidelities using subradiance and selective radiance in optical nanofibers," *Workshop on Optical Nanofiber Applications: From Quantum to Bio Technologies*, Okinawa
"Exponential improvement in photon storage fidelities using subradiance and selective radiance in atomic arrays," *seminar, Institut de NanoSciences de Paris*
"Subradiance and selective radiance in atomic arrays coupled to nanophotonic waveguides," *APS March Meeting*, New Orleans
"Interfacing cold atoms with nanophotonic systems," *Quantum Photonics Tutorial, APS March Meeting*, New Orleans
"Quantum many-body states of atomic spin and motion," *Frontiers of Nanomechanical Systems*, La Thuile, Italy
"Atom-light interactions as a quantum spin model," *Workshop on Numerical Methods for Quantum Optics,* CSIC, Madrid
"Enhancing atom-light interactions through subradiance," *seminar, TU Delft*

2016
"Solving quantum light propagation through atomic ensembles with matrix product states," *KITP Conference on Designer Quantum Systems out of Equilibrium*, Santa Barbara, CA, USA

"Enhancing atom-light interactions through subradiance," *seminar, Joint Quantum Institute*, University of Maryland, USA
"Atomic physics meets nanophotonics: creating complex quantum states of matter and light," *School on Thermodynamics and non-equilibrium phenomena at quantum interfaces of light and matter,* Cambridge University
"Mapping atom-light interactions to spin models and matrix product states," *Gordon Research Conference on Quantum Science*, Easton, MA, USA
"Atomic physics meets nanophotonics," *summer school lecture, Nanotechnology Meets Quantum Information*, San Sebastian, Spain
"Atom-optomechanics," *lecture, ICFO Master School on Quantum Nano- and Opto-Mechanics*, Barcelona, Spain
"Self-induced backaction trapping in nanophotonic systems," *Workshop on quantum control of levitated optomechanics*, Pontremoli, Italy
"Atomic physics meets nanophotonics: creating complex quantum states of matter and light," *seminar, Institut Néel,* Grenoble, France
"Utilizing Casimir forces of nanophotonic structures for atom trapping," *Conference on Casimir and van der Waals Physics: Progress and Prospects*, Hong Kong
"Self-organization of cold atoms coupled to nanophotonic systems," *seminar, University of Colorado Boulder*
"Atomic physics meets nanophotonics: creating strongly interacting states of atoms and light," *colloquium, University of Colorado Boulder*
"Designer quantum systems using cold atoms coupled to photonic crystals," *seminar, King's College London*
"Many-body physics with cold atoms coupled to photonic crystals," *seminar, Mainz University,* Germany
"Designer quantum systems using cold atoms coupled to photonic crystals," *Workshop on hybrid systems for quantum optics,* Bad Honnef, Germany

2015
"Engineering quantum atom-light interactions with photonic crystals," *seminar, Stanford University*
"Many-body physics with cold atoms coupled to photonic crystals," *seminar, Harvard-MIT Center for Ultracold Atoms*
"Many-body physics with cold atoms coupled to photonic crystals," *Conference on non-equilibrium dynamics of strongly interacting photons,* Kavli Institute for Theoretical Physics, Santa Barbara, USA
"Long-range interactions of atoms and photons in photonic crystals," *Workshop on topological effects and synthetic/magnetic fields for atoms and photons,* Zagreb, Croatia
"Cold atoms coupled to photonic crystals: a platform for tunable long-range interactions," *Bose-Einstein Condensation 2015,* Sant Feliu, Spain
"Self-induced backaction trapping in nanophotonic systems," *Frontiers in Nanophotonics*, Monte Verita, Switzerland
"New opportunities in low-dimensional QED systems," *NIM Conference on Resonator QED*, Munich, Germany
"Cold atoms coupled to photonic crystals: a platform for creating tunable long-range interactions," *SFB FoQus meeting*, Innsbruck, Austria
"Quantum nonlinear optical interactions between graphene plasmons," *OSA Meeting on Advanced Photonics*, Boston, MA
"Cold atoms coupled to photonic crystals: a platform for tunable long-range interactions," *colloquium, Saarland University*, Saarbrucken, Germany
"Creating long-range nonlinear optical interactions with cold atoms coupled to photonic crystals," *seminar, Niels Bohr Institute*, Copenhagen
"Creating long-range nonlinear optical interactions with cold atoms coupled to photonic crystals," *7th Summer School on Quantum and Nonlinear Optics,* Ringsted, Denmark
"Dynamics of quantum emitters coupled to waveguides," *lecture, 7th Summer School on Quantum and Nonlinear Optics,* Ringsted, Denmark
"Cold atoms coupled to photonic crystals: a platform for tunable long-range interactions," workshop on *New*

Trends in Complex Quantum Systems Dynamics, Cartagena, Spain
"Classical and quantum self-organization of cold atoms coupled to nanophotonic waveguides," *seminar, California Institute of Technology*
"Exploiting Casimir forces in nanophotonic structures for atom trapping," *seminar, Laboratoire de Physique des Lasers,* Paris
"Cold atoms coupled to photonic crystals: a platform for tunable long-range interactions," *seminar, Laboratoire de Physique des Lasers,* Paris
"Cold atoms coupled to photonic crystals: a platform for tunable long-range interactions," *seminar, Laboratoire Kastler Brossel,* Paris

2014
"Cold atoms coupled to photonic crystals: a platform for tunable long-range interactions," *Munich solid-state physics colloquium, Walter Schottky Institute, TU Munich*
"Exploring many-body physics with cold atoms coupled to nanophotonic systems," *colloquium, Institute for Laser Physics, University of Hamburg*
"Trapping atoms with nanoscale quantum vacuum forces," *Quantum Innovators Workshop*, Waterloo, Canada
"Cold atoms coupled to photonic crystals: a platform for tunable long-range interactions," *colloquium, Institute for Quantum Computing*, Waterloo, Canada
"Interfacing cold atoms with nanophotonic systems," *keynote talk, Quantum Technologies Conference V*, Krakow, Poland
"Cold atoms coupled to photonic crystals: a platform for tunable long-range interactions," *seminar, ETH Zurich*, Switzerland
"Atom-induced cavities in photonic crystal structures: a novel paradigm for long-range interactions," *META '14*, Singapore
"Levitated optomechanics," *Gordon Research Conference on Mechanical Systems in the Quantum Regime*, Ventura, USA
"Trapping atoms with nanoscale quantum vacuum forces," *The quantum optics frontier, Symposium in honor of Jeff Kimble's 65th birthday*, *California Institute of Technology*
"Interfacing cold atoms with nanophotonic systems," *Young Atom Opticians conference, ICFO*, Spain
"Trapping atoms with nanoscale quantum vacuum forces," *Casimir Physics workshop*, Les Houches, France
"Interfacing cold atoms with nanophotonic systems," *seminar*, *University of California – Berkeley*

2013
"Single atoms coupled to nanophotonic systems as optomechanical elements," *Cavity optomechanics – from the micro- to the macro scale*, Innsbruck, Austria
"Quantum nonlinear optics using plasmonic systems," *OSA Quantum Plasmonics Incubator Workshop*, Washington, DC
"Atom-nanophotonics interfaces: a novel platform for quantum optics and many-body physics," *seminar*, *Joint Quantum Institute, University of Maryland*
"Atoms coupled to nanophotonic waveguides: a novel platform for quantum optics," *PIERS Conference*, Stockholm
"Nanoscale atom traps based on quantum vacuum forces," *seminar*, *University of Nottingham*
"Nanoscale atom traps based on quantum vacuum forces," *seminar*, *University of Tubingen*
"Coupling cold atoms to nanophotonics: a novel platform for quantum nonlinear optics," *ICONO/LAT 2013*, Moscow
"Nanoscale atom traps based on quantum vacuum forces," *seminar*, *Atominstitut, TU Vienna*
"Nanoscale atom traps based on quantum vacuum forces," *Quantum Physics – From Fundamental Questions to Applications*, *ICFO-MPQ joint workshop*, Barcelona, Spain
"Nanoscale atom traps based on quantum vacuum forces," *seminar*, *Harvard-MIT Center for Ultracold Atoms*
"Atom-nanophotonics interface: a novel platform for strong coupling and many-body physics," *seminar*, *TU*

Munich
"Atoms coupled to nanophotonic systems: a novel platform for 'atom-optomechanics'", *43rd Winter Colloquium on the Physics of Quantum Electronics*, Snowbird, Utah, USA

2012
"Interfacing cold atoms with nanophotonics," *Seminar on Hybrid Quantum Systems*, Bad Honnef, Germany
"Interfacing cold atoms with nanophotonics," *Cold Atom Outlook 2012 – A European Endeavour*, Aarhus, Denmark
"Self-organization of atoms along a nanophotonic waveguide," *6th International Conference, Control of quantum correlations in tailored matter: Common perspectives of mesoscopic systems and quantum gases*, Gunzburg, Germany
"Ultrahigh-Q mechanical oscillators through optical trapping of tethered membranes," *Frontiers in Optics / Laser Science XXVIII*, Rochester, New York, USA
"Self-organization of atoms coupled to a nanophotonic waveguide," *Frontiers in Optics / Laser Science XXVIII*, Rochester, New York, USA
"Cavity QED with atomic mirrors," *Quantum Nano-Optics Workshop, ICFO*, Spain
"Cavity QED with atomic mirrors," *17th International Workshop on Microchip Plasmonics: Enabling Optics beyond the Diffraction Limit*, Erlangen, Germany
"Quantum plasmonics," *Singapore School of Physics: Strong Light-Matter Coupling, from atoms to solid-state systems*, Singapore
"Realizing high-Q mechanical systems through optical trapping," *seminar, University of Colorado Boulder / JILA*

2011
"Quantum optomechanics: new paradigms and applications," *seminar, University College London*
"Quantum optomechanics: new paradigms and applications," *seminar, Centre for Quantum Technologies*, Singapore
"Slowing and stopping light using an optomechanical crystal array," *5th Asia Pacific workshop on Quantum Information Science*, Singapore
"Quantum optomechanics: new paradigms and applications," *seminar, NIST*, Maryland

2010
"Quantum optomechanics: new paradigms and applications in optical information processing," *seminar, ICFO*, Spain
"Slowing and stopping light using an optomechanical crystal array," *4th International Workshop on Solid State Quantum Computing*, Shanghai, China
"Slowing and stopping light using an optomechanical crystal array," *TaCoNa Photonics*, Bad Honnef, Germany
"Quantum plasmonics," *International School of Quantum Electronics*, Erice, Sicily
"A single-photon transistor using nanoscale surface plasmons," *Frontier and New Prospects in Optical Science Symposium*, Annual Meeting of the Japanese Society of Applied Physics
"Quantum opto-mechanics using an optically levitated nanosphere," *Next Generation Photonics Symposium*, California Institute of Technology

2009
"Strong atom-photon coupling: applications toward quantum information," *4th Winter School on Quantum Information Science*, Yilan, Taiwan (2009)

2008
"Nanoscale traps for atoms using surface plasmons," *Workshop on Open Quantum Systems: Decoherence and Control*, Harvard University / ITAMP
"Quantum optics and atomic physics using plasmonics," *SPIE Symposium on NanoScience + Engineering*, San

Diego, CA
"Quantum and nonlinear optics with nanoscale surface plasmons," *SPIE Photonics West*, San Jose, CA
"Crystallization of strongly interacting photons in a nonlinear optical fiber," *Workshop on Quantum Noise in Correlated Systems*, Weizmann Institute

2007
"Quantum and nonlinear optics using nano-scale surface plasmons," *Workshop on Solid State Quantum Information Systems*, Niels Bohr Institute