

## Mohammad Hafezi

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### Educational Background

- 2003-2009, Ph.D., Physics, Harvard University
- 2000-2003, Diplome d'ingenieur, Physics-Math, Ecole Polytechnique
- 1998-2002, B.Sc., Physics (transferred), Sharif University

### Academic/Research Appointments

- 2017-Ongoing, Associate Professor of Electrical and Computer Engineering and Physics Departments (Joint appointment)
- 2014-2017, Assistant Professor, Electrical and Computer Engineering Department
- 2014-Ongoing, Affiliate of Institute for Research and Electronics and Applied Physics
- 2014-Ongoing, Fellow of Joint Quantum Institute
- 2012-2014, Senior Research Associate, Joint Quantum Institute
- 2009-2012, Research Associate, Joint Quantum Institute
- Fall 2012, Visiting scientist, Institute for Quantum Optics and Quantum Information, Innsbruck, Austrian Academy of Sciences
- Summer 2002, Intern, Institut d'optique théorique et appliquée, Orsay
- Summer 2001, Intern, Laboratoire de Physique Théorique (High Energy), Orsay

### Research Interests

- Quantum optics, Nanophotonics Optomechanics
- Theoretical and experimental investigation of topological states and strongly correlated systems
- Quantum information: Quantum hybrid systems

### Awards and Honors

- 2015, Young Investigator Program, Office of Naval Research
- 2015, Sloan Research Fellowship, Alfred P. Sloan Foundation
- 2005 and 2004, Certificate of distinction for excellence in teaching, Harvard University
- 2003, Certificate of distinction for outstanding senior project, Ecole Polytechnique
- 2003, Purcell Fellowship, Harvard University
- 2000, Fellowship of the Foundation of the Ecole Polytechnique
- 1998, Silver Medal, 29th International Physics Olympiad, Iceland
- 1997, Gold Medal, National Physics Olympiad, Iran

## Teaching

- ENEE789M/ PHY 720, Advanced Topics in Electrophysics; Quantum Technology
- ENEE381, Electromagnetic Wave Propagation
- ENEE 380, Electromagnetic Theory

## Synergistic Activities

- 2016, Organizing session chair, Frontier in Optics, Rutgers
- 2016, Organizing chair, Physics of Quantum Electronics, Snowbird, Utah
- 2016, Member, CLEO Quantum Optics of Atoms, Molecules and Solids Committee
- 2016 and 2017, Science Fair Judge, Prince George's County Public Schools/Buck Lodge
- 2016 and 2014, USA Science and Engineering Festival, DC, Volunteer
- 2015, Organizing chair, PIERS, Prague
- 2015, Organizer, "Non-equilibrium dynamics of strongly interacting photons" Conference at Kavli Institute for Theoretical Physics, UCSB
- 2015, Organizer, 8th Optoelectronics and Photonics Winter School, Fai della Paganella, Italy
- 2014, Session chair, APS March meeting, Denver
- 2014, Co-Chair, OSA Incubator workshop on "topological order with photons"
- 2014-2015, Organizer, "Many-body physics with light" Program at Kavli Institute for Theoretical Physics, UCSB
- 2013, Session chair and invited session organizer, APS March Meeting, Baltimore
- 2012, Session chair, APS March meeting, Boston
- Reviewer of Funding agencies: European Research Council, Israel Science Foundation, National Physical Laboratory (UK), US-Israel Binational Science Foundation, Department of Energy, National Science Foundation, Basic Research Office (Office of Assistant Secretary of Defense for Research and Engineering)
- Refereed over 90 manuscripts for: Science, Nature, Nature Physics, Nature Photonic, Nature Communications, Review of Modern Physics, PRL, PRA, EPL, JOSA B, Optics Express, IEEE, Annalen der Physik and others.

## Patents

- 2015, Systems, methods and devices for optomechanically induced non-reciprocity, US9128246 B2
- 2015, Two-dimensional coupled resonator optical waveguide arrangements and systems, devices, and methods thereof, US9052448 B2
- 2015, Optical Voltage article, process for making and using same, 62143984
- 2014, Optical Temperature Sensor and use of same, US20140321502 A1

## PUBLICATIONS

### Research Journals and arXiv:

For the updated list refer to <http://groups.jqi.umd.edu/hafezi/publications>

1. A. Ghazaryan, M. Gullans, P. Ghaemi, and M. Hafezi, “Light-induced fractional quantum Hall phases in graphene”, arXiv preprint arXiv:1612.08748 (2016).
2. M. Gullans, J. Taylor, A. Imamoglu, P. Ghaemi, M. Hafezi “High-Order Multipole Radiation from Quantum Hall States in Dirac Materials arXiv:1701.03464 (2016).
3. B. Cao, M. Khan, M. Hafezi, “Two coupled nonlinear cavities in a driven-dissipative environment” *Phys. Rev. A* 94, 063805 (2016).
4. G. Zhu, M. Hafezi, T. Grover, “Measurement of many-body chaos using a quantum clock” *Phys. Rev. A* 94, 062329 (2016).
5. H. Pichler, G. Zhu, A. Seif, P. Zoller, M. Hafezi, “A Measurement Protocol for the Entanglement Spectrum of Cold Atoms” *Phys. Rev. X* 6, 041033 (2016).
6. S. Barik, H. Miyake, W. DeGottardi, E. Waks, M. Hafezi, “Two-Dimensionally Confined Topological Edge States in Photonic Crystals” arXiv:1605.08822 (2016) accepted in *New Journal of Physics*.
7. Ryan M. Wilson, Khan W. Mahmud, Anzi Hu, Alexey V. Gorshkov, Mohammad Hafezi, Michael Foss-Feig, “Collective phases of strongly interacting cavity photons” ***Phys. Rev. A*** 94, 033801 (2016).
8. S. Mittal, V. Vikram Orre, and M. Hafezi, “Topologically robust transport of entangled photons in a 2D photonic system”, ***Optics Express*** 24, 15631-15641 (2016).
9. B. Cao, K. W. Mahmud, and M. Hafezi “Two coupled nonlinear cavities in a driven-dissipative environment”, *Phys. Rev. A* , 94, 063805 (2016).
10. S. Mittal, S. Ganeshan, J. Fan, A. Vaezi, and M. Hafezi, “ Measurement of topological invariants in a 2D photonic system”, ***Nature Photonics*** 10, 180 (2016).
11. A. V. Poshakinskiy, A. N. Poddubny, M. Hafezi “Phase spectroscopy of topological invariants in photonic crystals” ***Phys. Rev. A*** 91, 043830 (2015)
12. M. F. Maghrebi, N. Y. Yao, M. Hafezi, T. Pohl, O. Firstenberg, and A. V. Gorshkov, “Fractional Quantum Hall States of Rydberg Polaritons”, ***Phys. Rev. A***, 91, 033838 (2015).
13. D. Marcos, P. Widmer, E. Rico, M. Hafezi, P. Rabl, U.-J. Wiese, P. Zoller, “Two-dimensional lattice gauge theories with superconducting quantum circuits”, ***Annals of Physics*** 351, 634 (2014).
14. F. Grusdt, F. Letscher, M. Hafezi, and M. Fleischhauer, “Topological growing of Laughlin states

- in synthetic gauge fields”, **Phys. Rev. Lett.** 113, 155301 (2014).
15. M. Hafezi, P. Adhikari, J. M. Taylor, “Chemical potential for light by parametric coupling”, **Phys. Rev. B.** 92, 174305 (2015).
  16. E. Kapit, M. Hafezi, S. Simon, “Induced self-stabilization in fractional quantum Hall states of light”, **Phys. Rev. X**, 4, 031039 (2014).
  17. S. Mittal, J. Fan, S. Faez, A. Migdall, J. M. Taylor, M. Hafezi, “Topologically Robust Transport of Photons in a Synthetic Gauge Field” **Phys. Rev. Lett.** 113, 087403 (2014) Highlighted in Physics Viewpoint *Khanikaev and Genack* 7, 87 (2014).
  18. M. Hafezi, “Measuring topological invariants in photonic systems”, **Phys. Rev. Lett.** 112, 210405 (2014).
  19. H. Xu, M. Hafezi, J. Fan, J. M. Taylor, G. F. Strouse, Z. Ahmed, “ Ultra-Sensitive Chip-Based Photonic Temperature Sensor Using Ring Resonator Structures **Optics Express** 22, 3098 (2014).
  20. M. Hafezi, P. Adhikari, J. Taylor, “Engineering three-body interaction and Pfaffian states in circuit QED systems”, **Phys. Rev. B** 90, 060503 (R) (2014).
  21. K. Stannigel, P. Hauke, D. Marcos, M. Hafezi, S. Diehl, M. Dalmonte, P. Zoller, “Constrained dynamics via the Zeno effect in quantum simulation”, **Phys. Rev. Lett.** 112, 120406 (2014).
  22. M. Hafezi, M. Lukin, J. Taylor, “Non-equilibrium fractional quantum Hall state of light ” **New J. Phys.** 15 063001 (2013). Featured in Highlights of New Journal of Physics 2013.
  23. M. Hafezi, S. Mittal, J. Fan, A. Migdall, J. Taylor, “Imaging topological edge states in silicon photonics”, **Nature Photonics** 7, 1001 (2013). In **News and Views** by A. Khanikaev, **Nature Photonics** 7, 941–943 (2013), Research Highlight by D. Gevaux **Nature Physics** 9, 753 (2013).
  24. P. Adhikari, M. Hafezi, J. M. Taylor, “Nonlinear Optics Quantum Computing with Circuit QED”, **Phys. Rev. Lett.** 110, 060503 (2013).
  25. Peyronel, M. Bajcsy, S. Hofferberth, V. Balic, **M. Hafezi**, Q. Liang, A. Zibrov, V. Vuletic, and M. D. Lukin, “Switching and counting with atomic vapors in photonic-crystal fibers”, **IEEE Journal of Selected Topics in Quantum Electronics** 18, 1747 (2012).
  26. **M. Hafezi**, Z. Kim, S. L. Rolston, L. A. Orozco, B. L. Lev., J. M. Taylor, “ An atomic interface between microwave and optical photons”, **Phys. Rev. A Rapid** 85, 020302 (2012).
  27. **M. Hafezi**, P. Rabl, “ Optomechanically induced non-reciprocity in microring resonators”, **Optics Express** 20, 7684 (2012). News coverage includes: Science Daily, Photonics
  28. **M. Hafezi**, E. Demler, M. D. Lukin, Jacob Taylor, “Robust optical delay lines via topological protection”, **Nature Physics** 7, 907 (2011). News coverage includes: Science Daily, Photonics, Material 360 (Materials Research Society), NIST Tech Beat, Nanowerk, RedOrbit, PhysOrg.com, Physics News
  29. J. E. Hoffman, J. A. Grover, Z. Kim, A. K. Wood, J. R. Anderson, A. J. Dragt, M. Hafezi, C. J. Lobb, L. A. Orozco, S. L. Rolston, J. M. Taylor, C. P. Vlahacos, F. C. Wellstood, “Atoms Talking to SQUIDS”, *Rev. Mex. de S* 57, 1 (2010), also at arXiv:1108.4153.
  30. D. Chang, A. Safavi-Naeini, M. Hafezi, O. Painter, “Slowing and stopping light using an optomechanical

crystal array”, **New J. Phys.** 13, 023033 (2011). Also appears in the Virtual Journal of Quantum Information 11, 3 (2011).

31. M. Hafezi, D. Chang, V. Gritsev, E. Demler, M. Lukin, “Quantum transport of strongly interacting photons in a 1D nonlinear waveguide”, **Phys. Rev. A** 85, 013822 (2012).
32. Z. Kim, C. Vlahacos, J. Hoffman, J. Grover, K. Voigt, B. Cooper, C. Ballard, B. Palmer, M. Hafezi, J. Taylor, J. Anderson, A. Dragt, C. Lobb, L. Orozco, S. Rolston, and F. Wellstood, “Thin-film Superconducting Resonator Tunable to the Ground-state Hyperfine Splitting of  $^{87}\text{Rb}$ ”, **AIP Advance** 1, 042107 (2011).
33. M. Hafezi, Darrick Chang, Vladimir Gritsev, E. Demler, M. D. Lukin, “Photonic quantum transport in a nonlinear optical fiber”, **Euro Phys. Lett.** 94, 54006 (2011).
34. M. Bajcsy, S. Hofferberth, V. Balic, T. Peyronel, M. Hafezi, A. S. Zibrov, V. Vuletic, M. Lukin, “Efficient all-optical switching using slow light within a hollow fiber”, **Phys. Rev. Lett.** 102, 205501(2009), Featured in *Physics* 2, 41 (2009) and *Physics World*.
35. M. Vengalattore, M. Hafezi, M. D. Lukin, M. Prentiss, “Optical bistability at low light level due to collective atomic recoil”, **Phys. Rev. Lett.** 101, 063901 (2008).
36. Liang Jiang, Gavin Brennen, Alexey Gorshkov, Klemens Hammerer, Mohammad Hafezi, Eugene Demler, Mikhail Lukin, Peter Zoller, “Anyonic interferometry and protected memories in atomic spin lattices”, *Nature Physics* 4, 482-488, (2008). Also appears in the Virtual Journal of Nanoscale Science & Technology 7, 24 (2008) and in the Virtual Journal of Quantum Information 8, 6 (2008).
37. M. Hafezi, Anders S. Sorensen, Mikhail D. Lukin, Eugene Demler, “Characterization of topological states on a lattice with Chern number”, **Euro Phys. Lett.** 81, 10005 (2008).
38. Mohammad Hafezi, Anders S. Sorensen, Eugene Demler, Mikhail D. Lukin, “Fractional Quantum Hall Effect in Optical Lattices”, **Phys. Rev. A** 76, 023613 (2007), mentioned in *Physics* 4,46 (2011).
39. Jérôme Wenger, Mohammad Hafezi, Frédéric Grosshans, Rosa Tualle-Brouri, Philippe Grangier, “Maximal Violation of Bell Inequalities using Continuous Variables Measurements”, **Phys. Rev. A** 67, 012105 (2003). Also appears in the Virtual Journal of Nanoscale Science & Technology 7, 4 (2003) and in the Virtual Journal of Quantum Information 3, 2 (2003).

## Reviews

40. S. Mittal, and M. Hafezi, “Round the bend with microwaves”, **Nature** 522, 292 (2015).
41. M. HAFEZI AND J. TAYLOR, “TOPOLOGICAL PHYSICS WITH LIGHT”, **PHYSICS TODAY** 67, 68 (2014).
42. M. HAFEZI, “SYNTHETIC GAUGE FIELDS WITH PHOTON”, **INT. J. MOD. PHYS. B** 28, 1441002 (2014).
43. M. HAFEZI, “Microwave Photons Move Out of Equilibrium”, **Physics**, 7, 92 (2014).

## Published Conference Proceedings

1. Topological Physics in Photonic Systems, M. Hafezi, *Physics of Quantum Electronics*, 2016
2. Measuring topological invariants in photonic system, S. Mittal, S. Ganeshan, A Vaezi, M. Hafezi, *META 2015 Conference*, New York, 2015

3. Topologically Robust Transport of Photons in a Synthetic Gauge Field, S. Mittal, J. Fan, S. Faez, A. Migdall, J. M. Taylor, and M. Hafezi, *Physics of Quantum Electronics*, 2015
4. Measuring topological invariants in photonic systems, S. Mittals, S. Ganeshan, J. Fan, A Vaezi and M. Hafezi, 9th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics - Metamaterials, Oxford, United Kingdom, 2015
5. Topological edge states in silicon photonics, S. Mittal, J. Fan, A. Migdall, J. Taylor, M. Hafezi, META 2014 Conference, Singapore, 2014
6. Topological Edge States in Silicon Photonics, S. Mittal, J. Fan, A. Migdall, J. M. Taylor, M. Hafezi, CLEO, 2014
7. Photonic temperature sensor based on microring resonators, CLEO, 2013
8. Few photon switching with slow light in hollow fiber, M. Bajcsy, S. Hofferberth, V. Balic, T. Peyronel, M. Hafezi, A. S. Zibrov, V. Vuletic, M. D. Lukin, *Proc. SPIE 7226, Advances in Slow and Fast Light II*, 2009

#### Selected Conferences, Workshops and Talks

1. NanoMeta Conference, “Towards Topological Quantum Transport in Photonic Structures” Seefeld, Austria (Jan 2017) invited.
2. KITP-UCSB, Designer Quantum Systems out of equilibrium “Measurement Protocols for Many-body Properties in AMO Systems”, ( Nov 2016) invited.
3. Condensed Matter Seminar, Boston University, “Measuring many-body characters in AMO system”, Boston (Oct 2016) invited.
4. CMP-Purdue Quantum Center seminar, Purdue University, “Photonic structures with topological robustness: from classical to quantum”, (Oct 2016) invited
5. KITP-UCSB, program on Synthetic Quantum Matter, “Driven quantum Hall models in photonic systems” (Sep 2016). invited
6. PIERS, Shanghai, “Towards Non-classical Topological Physics in Photonic Structures” (Aug 2016). invited
7. KITPC-PKU conference, Synthetic Topological Quantum Matter, Beijing, “Topological physics in nanophotonics” (Aug 2016), invited
8. META conference, Malaga, Spain, “Topological photonics: ring resonators and photonic crystals” (Jul 2016), invited
9. Quantum simulation and many-body physics with light, Crete, Greece “Quantum transport in topological photonic structures” (Jun 2016), invited
10. Solvay Workshop on 'Quantum simulation with cold matter and photons', Brussels, Belgium “New prospects in topological photonics” (Feb 2016) invited
11. *Physics of Quantum Electronics*, Snowbird, Utah, “Topological Physics in Photonic Systems” (Jan

- 2016) invited
12. Seminar Applied Physics, Stanford University, “Topological robustness in photonic systems”, (Dec 2015), invited
  13. Colloquium, ESE Department, University of Pennsylvania “Exploring Topological Physics in Photonic Systems,” (Oct 2015) invited
  14. Workshop Physics of bulk-edge correspondence, Tokyo, “Quantum Hall physics in photonics systems and observation of chiral anomaly” (Sep 2015) invited
  15. Gordon Research Conference on Quantum Control of Light & Matter, “Measuring Topological Invariants in Photonic Systems” Mt. Holyoke College (Aug 2015) invited
  16. PIERS, Prague, “Measuring Topological Invariants in Photonic Systems” (Jul 2015), invited
  17. Amsterdam Summer Workshop on Low-D Quantum Condensed Matter, University of Amsterdam, “Topological states in driven photonic systems” (Jul 2015), invited
  18. Light-matter interactions in low dimensions, ITAMP-Harvard workshop, “Topological states in driven photonic systems” (Jun 2015) invited
  19. Ecole de Physique, Quebec, Canada “Propriétés topologiques des systèmes photoniques” (Jun 2015) invited
  20. Advanced Photonics Congress, OSA meeting, “Measuring Topological Invariants in Photonic Systems” (Jun 2015), invited
  21. Winter workshop, Aspen Center for Physics, “Measuring topological invariants in photonic systems” (Mar 2015) invited
  22. Winter school, Fai della Paganella, “Topological features in photonics” (Mar 2015)
  23. APS March meeting, invited talk, San Antonio, “Photons in synthetic gauge fields” (Mar 2015) invited
  24. APS March meeting, invited session, San Antonio, “Preparation and measurement of strongly interacting states of photons” (Mar 2015) invited
  25. SPIE WEST, “Photons in synthetic gauge fields” San Francisco (Feb 2015) invited
  26. Physics of Quantum Electronics, Snowbird, Utah, “Topologically Robust Transport of Photons in a Synthetic Gauge Field” (Jan 2015) invited
  27. Quantum correlations out of equilibrium workshop, ETH “photons and gauge fields: from edge states to non-equilibrium FQH”, Zurich (Nov 2014) invited
  28. Colloquium, USC “Towards quantum simulation in photonic systems” Los Angeles (Oct 2014) invited
  29. Laboratory for physical sciences, University of Maryland “ Chiral edge state of photons and its potential applications” College Park (Sept 2014) invited
  30. SPIE Optics and Photonics, “Topological features in photonic systems” San Diego (Aug 2014) invited
  31. International Conference of Physics of Semiconductors (ICPS), “Topological orders in photonic systems” Austin, Texas (Aug 2014) invited
  32. International Conference on Atomic Physics (ICAP), “Photons in synthetic gauge fields” Washington DC (Aug 2014) invited

33. International seminar on “Topology and Entanglement in Correlated Quantum Systems”, From observation of non-interacting edge states towards simulating many-body physics, Dresden, Germany (July 2014) invited
34. The 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics, “Preparing many-body (topological) states in photonic system” Singapore, (May 2014) invited
35. Laboratory for Research on the Structure of Matter, “Topological features in photonic systems” University of Pennsylvania (May 2014) invited
36. ECE department, “Quantum simulation with photons”, University of Maryland (April 2014) invited
37. Institut de Science et d'Ingénierie Supramoléculaires, “Topological features of photonic systems” University of Strasbourg (March 2014) invited
38. Physics Department, “Chiral edge states with topological robustness in photonic systems”, City College of New York (Feb 2014) invited
39. Electrical Engineering seminar, “Topological Features of Photonics Systems” Princeton University (Jan 2014) invited
40. Colloquium, Laboratoire de Photonique et de Nanostructures (LPN-CNRS), Marcoussis, France “Topological features of photonic systems”(Dec 2013) invited
41. Seminar, Applied Physics Department, Yale University, “Edge state transport and other topological features in photonic systems” (Nov 2013) invited
42. Quantum Dynamics of Low-Dimensional Systems Workshop dedicated to the memory Adilet Imambekov, Harvard University (Sept 2013) invited
43. Physics Colloquium, University of Maryland Baltimore County, Bosonic topological orders (Sept 2013) invited
44. Summer Programme for synthetic gauge fields for atoms and photons, Trento, Italy, Bosonic quantum Hall physics: from optical photons to circuit QED systems (Jul 2013) invited
45. Physics Department, Stuttgart University, Observation of topological photonic edge states in Silicon (Jun 2013) invited
46. Seminar, ETH Zurich, Observation of topological photonic edge states in Silicon, (Jun 2013) invited
47. Seminar, RLE, MIT, Observation of topological photonic edge states in Silicon (Jun 2013)
48. DAMOP conference, Quebec city, Canada, Observation of topological photonic edge state in Silicon (June 2013)
49. Physics of light-matter coupling in nanostructures, Crete, Greece, Observation of topological photonic edge state in Silicon, (May 2013) invited
50. Seminar, Laboratory for physical sciences, Exploring many-body physics with photons: From silicon photonics to circuit-QED (May 2013)
51. Physics Department Colloquium, University of New Mexico, Quantum Hall physics with light (Feb 2013), invited
52. LASSP Seminar, Cornell University, Quantum Hall physics with light (Feb 2013), invited



53. Colloquium at the Physics Department, George Mason University, Simulating matter with light: how photons can play the role of electrons (Feb 2013), invited
54. SPIE, Photonic West, San Francisco, Implementing and exploiting synthetic magnetic field in photonic systems: towards robust delay lines and isolators, (Feb 2013) invited
55. Physics Department, University of Pittsburgh, Quantum simulation with light: from robust edge states to non-equilibrium fractional quantum Hall physics (Nov 2012), invited
56. Physics Department, Stuttgart Universität, Germany, Theoretical and experimental investigation of quantum Hall physics in photonic systems (Nov 2012), invited
57. Institut de Physique et de Chimie des Matériaux de Strasbourg (CNRS), France, Quantum simulation with photons: towards the observation of photonic edge state (Nov 2012), invited
58. Institute for Theoretical Physics, Innsbruck, Austria, Quantum Hall physics with photons: from robust edge states to non-equilibrium fractional quantum Hall (July 2012) invited
59. Max-Planck Institut, Garching, Germany, Quantum Hall physics with photons: from robust edge states to non-equilibrium fractional quantum Hall (July 2012) invited
60. APS March Meeting (invited Session: Quantum Simulations), Boston, Quantum Hall physics with photons and its application, (Feb 2012) invited
61. SPIE, Photonic West, San Francisco, Implementation and application of quantum Hall physics with optical photons, (Jan 2012)
62. Institut de Ciències Fotòniques (ICFO), Barcelona, Spain, Quantum Hall physics with photons and its applications (Jan 2012) invited
63. Nanoscale Science and Engineering Center (NSEC), Columbia University, New York, Quantum Hall physics with photons and its applications (Nov 2011) invited
64. SPIE, San Diego, Robust optical delay lines via topological protection (Aug 2011)
65. BBN Technologies (Raytheon), Cambridge, MA, Simulating Quantum Hall physics with photons and exploiting topological robustness (Jul 2011)
66. APS-DAMOP meeting, Atlanta, Georgia, Robust optical delay lines via topological protection (Jun 2011)
67. University of Trento, Italy, Photonic Quantum Hall physics (Jun 2011), invited
68. University of Innsbruck, Austria, Quantum Hall Physics and its application (May 2011), invited
69. University of Vienna, Quantum Hall Physics with photons and its application (May 2011), invited
70. Condensed Matter Theory Center, University of Maryland, Photonic Quantum Hall physics with photons and its applications (May 2011)
71. Smith School of Business, University of Maryland, Two-Dimensional Coupled Resonator Delay System (May 2011), invited
72. QIBEC seminar, National Institute of Standard and Technology, Gaithersburg, Robust optical delay lines via topological protection (Apr 2011), invited
73. Center for Quantum Technologies, Quantum Hall physics with optical photons, Singapore (Jan

- 2011), invited
74. Joint Quantum Institute Seminar, Quantum Hall Physics with Photons (Nov 2010)
  75. l'Institut d'Optique, Quantum transport in a nonlinear optical fiber, (Aug 2010)
  76. Ecole Normale Supérieure - Paris, Quantum Spin Hall systems with photons (Aug 2010)
  77. Institute for Quantum Information, CALTECH, Photonic non-equilibrium quantum transport in a nonlinear medium (Dec 2009), invited
  78. Condensed Matter Theory Center, University of Maryland, Photonic Quantum Transport, from single-photon switch to out of equilibrium dynamics (Oct 2009)
  79. Fan Group, Stanford University: Single-photon gate and out-of-equilibrium dynamics in a nonlinear optical fiber (July 2009), invited
  80. Chair of Quantum Optics, University of Arizona: Quantum transport in a nonlinear optical fiber (June 2009), invited
  81. Optical Nanostructure Laboratory, Columbia University: single-photon switching, photonic bound states / Quantum Transport in nonlinear fiber (May 2009), invited
  82. Joint Quantum Institute, Maryland: Single-photon switching, photonic bound states and more (March 2009), invited
  83. Silicon Photonics Lab, Intel, Santa Clara: Single-photon switching/Quantum transport in a nonlinear optical fiber (Feb 2009)
  84. HP labs, Palo Alto: Quantum transport in a nonlinear optical fiber (Feb 2009)
  85. Optics and Quantum Electronics Seminar, MIT: Nonlinear Schrodinger Equation in nonlinear optical fiber (Feb 2009), invited
  86. Institute for Solid State Physics, University of Tokyo, Japan: Topological states in atomic systems (Jun 2008) (invited but cancelled due to travel complication)
  87. Condensed Matter Group, University of Utah: Chern number characterization of Fractional Quantum Hall states on lattice (Sept 2007), invited