Cristiano Ciuti

Contact Information
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Professional and Academic Experience

2006–present	Professor of physics ('Classe Exceptionnelle' since 2017, '1ère classe' in 2012), Université Paris Diderot (UPD), France
2003–2006	Lecturer (*Maître de Conférences*), Ecole Normale Supérieure (ENS), Paris, France
2001–2003	Post-doc (group of L.J. Sham), University of California, San Diego (UCSD), USA
1997–2001	Graduate Assistant, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

Education

17/10/2005	Habilitation in Physics (HDR), Université Pierre et Marie Curie, Paris, France
1997–2001	PhD in Physics (supervised by A. Quattropani), Ecole Polytechnique Fédérale de Lausanne
1992–1997	Physics Diploma *cum laude*, Scuola Normale Superiore (SNS) & University of Pisa, Italy

Awards and Fellowships

2013	ERC Consolidator Grant "Theory of strongly correlated photonic systems" (CORPHO)
2010	Nominated Member of Institut Universitaire de France (IUF)
2003	Marie Curie Fellowship (declined due to ENS tenured lectureship)
2001	Prospective Fellowship awarded by the Swiss National Science Foundation
1992	4-year Scuola Normale Superiore scholarship, Italy

Current research interests

- Quantum optics of condensed matter systems
- Theory of non-equilibrium manybody quantum systems
- Strongly correlated photonic systems
- (Ultra)strong coupling cavity and circuit quantum electrodynamics (QED)
- Hybrid quantum systems and quantum optomechanics

Publications and bibliometry

Google scholar profile: http://scholar.google.fr/citations?user=rzc1ND0AAAAJ&hl=en
Google scholar statistics: h-index = 50, > 9400 citations.

100 peer-reviewed papers (excluding proceedings) in the following journals:

76 APS articles (25 PRL, 32 PRB, 18 PRA, 1 Rev. Mod. Phys.)
8 NPG articles (3 *Nature*, 1 *Nat. Phys*., *2 Nat. Comm., 1 Nat. Phot*., 1 *Sci. Reports*)
16 articles in other Journals: 2 Science, 5 APL, 2 Solid State Commun., 1 New J. Phys., 1 C. R. Physique, 1 Semicond. Sci. Tech., 1 J. Appl Phys., 2 Eur. Phys. J., 1 J. Phys. A

Invited Talks

52 invited talks at international conferences
31 invited seminars at universities

Teaching experience

2006–present	Université Paris Diderot, undergraduate teaching: quantum mechanics, (L3, 2013–present), quantum optics in condensed matter (M2, 2017-present), condensed matter physics (M1, 2009-2012), mathematical methods (L3, 2007–2010), general physics (L1, 2006–2010), photodetectors (M1, 2007), quantum physics of semiconductors (M2, 2012–2016)
2003–2006	Ecole Normale Supérieure Paris, undergraduate teaching: introduction to quantum field theory (2003), quantum mechanics (2004–2006), nanostructures (2004–2006)
2001–2003	UCSD, Assistant, graduate class of advanced quantum mechanics
1997–2001	EPFL, Assistant in classical physics, solid-state physics, numerical physics & electromagnetism

Supervising experience

Supervisor of nine completed PhD theses (A. Verger, S. De Liberato, S. Pigeon, P. Nataf, D. Hagenmüller, L. Nguyen-thê, A. Baksic, J. Restrepo, A. Le Boité) + 4 on-going PhD theses
Supervisor of 11 postdocs (M. Bamba, S. De Liberato, P. Solinas, S. Finazzi, A. Goetschy, J. Restrepo, W. Casteels, M. Labousse, R. Rota, N. Bartolo, A. Biella)

Funding track record

ERC Consolidator Grant Principal investigator (PI), CORPHO (since June 2014, 5 year duration).
Marie Curie Initial Training Network partner (ITN) NOTEDEV (2013–2017)
PI QPOL project (2010-2014), funded by the French agency ANR
PI Institut Universitaire de France Grant (2010–2015)
French network projects collaborative partner: ANR UNIQ (2016-2020), ANR QUANDYDE (2010–2014), ANR SENOQI (2009–2011), ANR GEMINI (2008–2011), ACI POLARITON (2004–2007)

Management experience

2016– present	Habilitation Research Diploma (HDR) Coordinator, UPD (physics)
2012– present	Scientific Council Member (nominated for a 2nd term), UPD Physics Department Responsibilities: scientific politics, research project quality control, management and human resources; available employment position description development; hiring committee selection; coordination and collaboration (total 16 institutes and laboratories), UPD Physics Department (140 faculty members, 90 CNRS researchers, 30 administrative staff members)
2009–present	Director of the Theory group at MPQ-UPD
2008–2012	Laboratoire Matériaux et Phénomènes Quantiques Council Member
2003–2006	ENS Physics Department International Internship Program Manager

Reviewer experience for funding agencies and peer-reviewed journals

European Research Council (ERC) reviewer, 2012–present
French National Research Agency (ANR) reviewer, 2009–present
Marie Curie People program of the Research European Agency (REA) referee, 2010–2014
US *National Science Foundation* and the *Department of Defense* reviewer
Austrian Research Council reviewer

New Zealand Science Foundation reviewer
Member of 27 thesis committees: 23 PhD theses and 4 Habilitation theses
Referee for *Science*, *Nature*, *Nature Physics*, *Nature Photonics*, *Nature Communications*, *American Physical Society* (PRL, PRX, PRA, PRB), *Optical Society of America* (Opt. Lett., Opt. Express, JOSAB), *European Physical Journal, Applied Physics Letters*…

Organization of conferences, seminars and workshops

Chair, *Quantum Fluids of Light and Matter* conference (QFLM 2017, Cargèse, 8–12 May 2017)
Program committee member, Workshop *Quantum simulations and manybody physics with light* (Crete, 5–12 June 2016, Chania, Crete, Greece)
Member of the Committee of the *Eighth International Conference on Spontaneous Coherence in Excitonic Systems* (ICSCE8, Edinburgh, UK, 25–29 April 2016)
Member of the Committee of the conference *Hybrid Photonics and Materials* (HPM 2015, Santorini, Greece, 27–31 May 2015)
Co-organizer of the conference "*Strongly correlated fluids of light and matter*" (ECT, Trento, 12–25 January 2015)
Member of the Committee of the Conference *Sixth International Conference on Spontaneous Coherence in Excitonic Systems* (ICSCE6, Stanford, USA, 27–31 August 2012)
Member of the Committee of the 11th International Conference on Intersubband Transitions in Quantum Wells (ITQW2011, Badesi, Sardinia, Italy, 11–17 September 2011)
Co-organizer of the conference *New trends in the physics of the quantum vacuum: from condensed matter, to gravitation and cosmology* (ECT, Trento, Italy, 27 June – 1 July 2011)
Co-organizer of Colloque Théorie de la Matière Condensée en Ile de France (Institut Poincaré/IHP, Paris, France, 29–30 November 2010)

Visiting professorships

Kavli Institute of Theoretical Physics, Santa Barbara (4 weeks, autumn 2015)
ETHZ, Zürich, Switzerland (September–December 2014)
Technische Universität, Vienna (April 2010)

International university seminars

EPFL, Lausanne, Switzerland (December 2016)
TU Berlin, Germany (November 2016)
Princeton University, USA (June 2016)
JQI, University of Maryland, USA (June 2016)
Queen's University, Belfast, UK (April 2016)
Macquarie University, Sydney, Australia (February 2016)
Swinburne University, Melbourne, Australia (February 2016)
KITP, University of California at Santa Barbara, USA (October 2015)
ETHZ, Switzerland (October 2014)
Osaka University, Japan (June 2013)
Imperial College, London, UK (May 2013)
University of Queensland, Australia (August 2012)
TU Berlin, Germany (January 2012)
University of Regensburg, Germany (May 2011)
Yale University, USA (January 2011)
University of Tokyo, Japan (July 2010)
RIKEN laboratories, Japan (July 2010)
Technische Universität, Vienna, Austria (April 2010)
Stanford University, USA (January 2009)
Harvard University, USA (January 2009)

Yale University, USA (January 2009)
University of Konstanz, Germany (January 2008)
Technische Universität, Vienna, Austria (June 2007)
Université de Lyon, France (December 2006)
ETH-Zürich, Switzerland (November 2006)
Università di Trento, Italy (December 2005)
Scuola Normale Superiore, Pisa, Italy (May 2005)
University of Neuchâtel, Switzerland (June 2004)
Purdue University, Indiana, USA (November 2002)
University of California, San Diego, USA (September 2001)
University of Southampton, England, UK (December 2000)

Selected scientific discoveries and contributions

Theory
- Exact and numerical results for dissipative phase transitions (2016)
- Development of the 'Corner-space renormalization method' for 2D open lattice systems (2015)
- Mean-field phase-diagram of the driven-dissipative Bose-Hubbard model (2013, 2014)
- Quantum theory of single-polariton optomechanics (2014)
- Review of Modern Physics 'Quantum fluids of light' (2013)
- Theory of unconventional photon blockade (2012)
- Prediction of hydrodynamic nucleation of vortices and solitons in polariton superfluids (2011)
- Prediction of ultrastrong cavity QED for a 2D electron gas under a magnetic field (2010)
- Vacuum degeneracy in ultrastrong coupling circuit QED (2010)
- Theory of fermionized photons in arrays of nonlinear cavities (2009)
- Quantum theory of electron tunneling into cavity polaritons (2009)
- Theory of spatial and spectral shapes of inhomogeneous exciton-polariton condensates (2008)
- Theory of quantum vacuum radiation from a time-modulated vacuum Rabi frequency (2007)
- Input-output theory for ultrastrong coupling cavity QED (2006)
- Theoretical prediction of ultrastrong coupling cavity QED for a 2D electron gas (2005)
- Theoretical prediction of polariton superfluidity in disordered microcavities (2004)
- Theory of ferromagnetic proximity effects in semiconductors (2002)
- Quantum theory of polariton parametric amplification and luminescence (2000, 2001)
- Theory of spin-dependent effects in exciton-exciton interaction (1998)

Collaborations with experimental groups
- Light-mediated cascaded locking of multiple nano-optomechanical oscillators (2016)
- Dynamical hysteresis in the quantum regime (2016)
- Polariton-generated intensity squeezing in semiconductor micropillars (2014)
- Ultrastrong coupling of the cyclotron transition of a 2D electron gas to a THz metamaterial (2012)
- Observation of quantum hydrodynamic solitons in polariton superfluids (2011)
- Observation of ultrastrong light-matter coupling regime with polariton dots (2010)
- Observation of polariton superfluidity (2009)
- Demonstration of sub-cycle switch-on of ultrastrong light-matter interaction (2009)
- Electrically injected cavity polaritons (2008)
- Parametric oscillation in vertical triple microcavities (2006)
- Demonstration of high-temperature ultrafast polariton parametric amplification (2001)
- Off-branch polaritons and multiple scattering in semiconductor microcavities (2001)

Key collaborating groups since tenure

2015–present: R. Fazio (ICTP Trieste & SNS Pisa, Italy)
2014–present: V. Manucharyan (JQI, University of Maryland, USA)

2011–present: J. Faist (ETH-Zürich, Switzerland)
2011–present: I. Favero (MPQ-UPD, Paris, France)
2010–present: A. Imamoglu (ETH-Zürich, Switzerland)
2010–present: J. Bloch (C2N-CNRS, Marcoussis, France)
2008–present: A. Bramati & E. Giacobino (LKB-UPMC, Paris, France)
2008–2010: R. Huber (Univ. Regensburg, Germany)
2006–2010: A. Tredicucci (SNS, Pisa, Italy)
2003–2007: J. Tignon (LPA-ENS, Paris, France)
2003–2006: G. Bastard (LPA-ENS, Paris, France)
2004–present: R. Colombelli (C2N, Univ. Paris-Saclay, France)
2004–present: C. Sirtori (MPQ-UPD, Paris, France)
2003–present: I. Carusotto (INO-CNR BEC Center, Univ. Trento)

List of publications, patents, invited talks at international conferences

Papers published in peer-reviewed journals (excluding proceedings)

[100] J. Lebreuilly, A. Biella, F. Storme, D. Rossini, R. Fazio, C. Ciuti, and I. Carusotto, *Stabilizing strongly correlated photon fluids with non-Markovian reservoirs*, **Phys. Rev. A** 96, 033828 (2017)
[99] A. Biella, F. Storme, J. Lebreuilly, D. Rossini, R. Fazio, I. Carusotto, and C. Ciuti, *Phase diagram of incoherently driven strongly correlated photonic lattices*, **Phys. Rev. A** 96, 023839 (2017)
[98] R. Rota, .W Casteels, C. Ciuti, *On the robustness of strongly correlated multi-photon states in frustrated driven-dissipative cavity lattices*, **Eur. Phys. J. Spec. Top.** 226, 2805 (2017)
[97] N. Bartolo, F. Minganti, J. Lolli, C. Ciuti, *Homodyne versus photon-counting quantum trajectories for dissipative Kerr resonators with two-photon driving*, **Eur. Phys. J. Spec. Top.** 226, 2705 (2017)
[96] V. E. Manucharyan, A. Baksic, C. Ciuti, *Resilience of the quantum Rabi model in circuit QED*, **J. Phys. A: Math. Theor.** 50, 294001 (2017)
[95] S. R. K. Rodriguez, W. Casteels, F. Storme, N. Carlon Zambon, I. Sagnes, L. Le Gratiet, E. Galopin, A. Lemaître, A. Amo, C. Ciuti, and J. Bloch, *Probing a Dissipative Phase Transition via Dynamical Optical Hysteresis*, **Phys. Rev. Lett.** 118, 247402 (2017)
[94] L. Garbe, I. L. Egusquiza, E. Solano, C. Ciuti, T. Coudreau, P. Milman, and S. Felicetti, *Superradiant phase transition in the ultrastrong-coupling regime of the two-photon Dicke model*, **Phys. Rev. A** 95, 053854 (2017)
[93] R. Rota, F. Storme, N. Bartolo, R. Fazio, and C. Ciuti, *Critical behavior of dissipative two-dimensional spin lattices*, **Phys. Rev. B** 95, 134431 (2017)
[92] J. Restrepo, I. Favero, C. Ciuti, *Fully coupled hybrid cavity optomechanics: quantum interferences and correlations*, **Phys. Rev. A** 95, 023832 (2017)
[91] E. Gil-Santos, M. Labousse, C. Baker, A. Goetschy, W. Hease, C. Gomez, A. Lemaître, G. Leo, C.Ciuti, I. Favero, *Light-mediated cascaded locking of multiple nano-optomechanical oscillators,* **Phys. Rev. Lett.** 118, 063605 (2017)
[90] W. Casteels, R. Fazio, C. Ciuti, *Critical dynamical properties of a first-order phase transition*, **Phys. Rev. A** 95, 012128 (2017)
[89] W. Casteels, C. Ciuti, *Quantum entanglement in the spatial symmetry-breaking phase transition of a driven-dissipative Bose-Hubbard dimer*, **Phys. Rev. A** 95, 013812 (2017)
[88] N. Bartolo, F. Minganti, W. Casteels, C. Ciuti, *Exact steady-state of a Kerr resonator with one and two-photon driving and dissipation: controllable Wigner-function multimodality and dissipative phase transitions,* **Phys. Rev. A** 94, 033841 (2016)
[87] W. Casteels, S. Finazzi, A. Le Boité, F. Storme, C. Ciuti, *Truncated correlation hierarchy schemes for driven-dissipative multimode quantum systems,* **New J. Phys.** 18, 093007 (2016)
[86] S. Fedortchenko, S. Huppert, A. Vasanelli, Y. Todorov, C. Sirtori, C. Ciuti, A. Keller, T. Coudreau, P. Milman, *Output squeezed radiation from dispersive ultrastrong light-matter coupling,* **Phys. Rev. A** 94, 013821 (2016)

[85] F. Minganti, N. Bartolo, J. Lolli, W. Casteels, C. Ciuti, *Exact results for Schrödinger cats in driven-dissipative systems and their feedback control*, **Scientific Reports** 6, 26987 (2016)
[84] W. Casteels, R. Rota, F. Storme, and C. Ciuti, *Probing photon correlations in the dark sites of geometrically frustrated cavity lattices*, **Phys. Rev. A** 93, 043833 (2016)
[83] W. Casteels, F. Storme, A. Le Boité, and C. Ciuti, *Power laws in the dynamic hysteresis of quantum nonlinear photonic resonators*, **Phys. Rev. A** 93, 033824 (2016)
[82] S. Finazzi, A. Le Boité, F. Storme, A. Baksic, and C. Ciuti, *Corner-Space Renormalization Method for Driven-Dissipative Two-Dimensional Correlated Systems*, **Phys. Rev. Lett.** 115, 080604 (2015)
[81] A. Amo, J. Bloch, A. Bramati, I. Carusotto, C. Ciuti, B. Deveaud, E. Giacobino, G. Grosso, A. Kamchatnov, G. Malpuech, N. Pavloff, S. Pigeon, D. Sanvitto, and D. D. Solnyshkov, *Comment on "Linear Wave Dynamics Explains Observations Attributed to Dark Solitons in a Polariton Quantum Fluid",* **Phys. Rev. Lett.** 115, 089401 (2015)
[80] J. Lolli, A. Baksic, D. Nagy, V. E. Manucharyan, and C. Ciuti, *Ancillary Qubit Spectroscopy of Vacua in Cavity and Circuit Quantum Electrodynamics*, **Phys. Rev. Lett.** 114, 183601 (2015)
[79] E. Cancellieri, T. Boulier, R. Hivet, D. Ballarini, D. Sanvitto, M. H. Szymanska, C. Ciuti, E. Giacobino, A. Bramati, *Merging of vortices and antivortices in polariton superfluids,* **Phys. Rev. B** 90 (21), 214518 (2014)
[78] A. Le Boité, G. Orso, C. Ciuti, *Bose-Hubbard model: Relation between driven-dissipative steady states and equilibrium quantum phases*, **Phys. Rev. A** 90 (6), 063821 (2014)
[77] A. Baksic, C. Ciuti, *Controlling Discrete and Continuous Symmetries in "Superradiant" Phase Transitions with Circuit QED Systems,* **Phys. Rev. Lett.** 112, 173601 (2014)
[76] R. Hivet, E. Cancellieri, T. Boulier, D. Ballarini, D. Sanvitto, F. M. Marchetti, M. H. Szymanska, C. Ciuti, E. Giacobino, A. Bramati, *Interaction-shaped vortex-antivortex lattices in polariton fluids*, **Phys. Rev. B 89**, 134501 (2014)
[75] T. Boulier, M. Bamba, A. Amo, C. Adrados, A. Lemaitre, E. Galopin, I. Sagnes, J. Bloch, C. Ciuti, E. Giacobino, A. Bramati, *Polariton-generated intensity squeezing in semiconductor micropillars,* **Nature Communications** 5, 3260 (2014)
[74] J. Restrepo, C. Ciuti, and Ivan Favero, *Single-Polariton Optomechanics*, **Phys. Rev. Lett.** 112, 013601 (2014)
[73] S. De Liberato, C. Ciuti, and C. C. Phillips, *Terahertz lasing from intersubband polariton-polariton scattering in asymmetric quantum wells*, **Phys. Rev. B** 87, 241304 (2013)
[72] Luc Nguyen-thê, Simone De Liberato, Motoaki Bamba, and Cristiano Ciuti, *Effective polariton-polariton interactions of cavity-embedded two-dimensional electron gases*, **Phys. Rev. B** 87, 235322 (2013)
[71] A. Le Boité, G. Orso, and C. Ciuti, *Steady-State Phases and Tunneling-Induced Instabilities in the Driven Dissipative Bose-Hubbard Model*, **Phys. Rev. Lett.** 110, 233601 (2013)
[70] S. De Liberato and C. Ciuti, *Quantum Phases of a Multimode Bosonic Field Coupled to Flat Electronic Bands*, **Phys. Rev. Lett.** 110, 133603 (2013)
[69] I. Carusotto, C. Ciuti, *Quantum fluids of light*, **Rev. Mod. Phys.** 85, 299 (2013)
[68] A. Baksic, P. Nataf, and C. Ciuti, *Superradiant phase transitions with three-level systems*, **Phys. Rev. A** 87, 023813 (2013)
[67] D. Hagenmüller, C. Ciuti, *Cavity QED of the Graphene Cyclotron Transition*, **Phys. Rev. Lett.** 109, 267403 (2012)
[66] C. Ciuti, P. Nataf, *Comment on "Superradiant Phase Transitions and the Standard Description of Circuit QED"*, **Phys. Rev. Lett.** 109, 179301 (2012)
[65] P. Nataf, A. Baksic, C. Ciuti, *Double symmetry breaking and two-dimensional quantum phase diagram in spin-boson systems*, **Phys. Rev. A** 86, 013832 (2012)
[64] G. Scalari, C. Maissen, D. Turcinková, D. Hagenmüller, S. De Liberato, C. Ciuti, D. Schuh, C. Reichl, W. Wegscheider, M. Beck, J. Faist, *Ultrastrong coupling of the cyclotron transition of a 2D electron gas to a THz metamaterial*, **Science** 335, 1323-1326 (2012)
[63] S. De Liberato, C. Ciuti, *Quantum theory of intersubband polarons*, Phys. Rev. B 85, 125302 (2012)

[62] I. Carusotto, S. De Liberato, D. Gerace, C. Ciuti, *Back-reaction effects of quantum vacuum in cavity quantum electrodynamics*, **Phys. Rev. A** 85, 023805 (2012)
[61] P. Nataf and C. Ciuti, *Protected Quantum Computation with Multiple Resonators in Ultrastrong Coupling Circuit QED*, **Phys. Rev. Lett.** 107, 190402 (2011)
[60] M. Bamba, C. Ciuti*, Counter-polarized single-photon generation from the auxiliary cavity of a weakly nonlinear photonic molecule*, **Appl. Phys. Lett.** 99, 171111 (2011)
[59] D. Sanvitto, S. Pigeon, A. Amo, D. Ballarini, M. De Giorgi, I. Carusotto, R. Hivet, F. Pisanello, V. G. Sala, P. S. Soares-Guimaraes, R. Houdré, E. Giacobino, C. Ciuti, A. Bramati, G. Gigli, *All-optical control of the quantum flow of a polariton condensate,* **Nature Photonics** 5, 610-614 (2011)
[58] A. Amo, S. Pigeon, D. Sanvitto, V. G. Sala, R. Hivet, I. Carusotto, F. Pisanello, G. Lemenager, R. Houdré, E Giacobino, C. Ciuti, A. Bramati, *Polariton superfluids reveal quantum hydrodynamic solitons*, **Science** 332, 1167-1170 (2011)
[57] J. Restrepo, J. Gabelli, C. Ciuti, I. Favero, *Classical and quantum theory of photothermal cavity cooling of a mechanical oscillator*, **C. R. Physique** 12, 860-870 (2011)
[56] S. Pigeon, I. Carusotto, C. Ciuti, *Hydrodynamic nucleation of vortices and solitons in a resonantly excited polariton superfluid*, **Phys. Rev. B** 83, 144513 (2011)
[55] M. Bamba, A. Imamoglu, I. Carusotto, C. Ciuti, *On the origin of strong antibunching in weakly nonlinear photonic molecules*, **Phys. Rev. A** 83, 021802 (2011)
[54] Y. Todorov, A. M. Andrews, R. Colombelli, S. De Liberato, C. Ciuti, P. Klang, G. Strasser, and C. Sirtori, *Ultrastrong Light-Matter Coupling Regime with Polariton Dots***, Phys. Rev. Lett.** 105, 196402 (2010)
[53] P. Nataf and C. Ciuti, *No-go theorem for superradiant quantum phase transitions in cavity QED and counter-example in circuit QED*, **Nature Commun.** 1:72 doi :10.1038/ncomms1069 (2010)
[52] A. Amo, S. Pigeon, C. Adrados, R. Houdré, E. Giacobino, C. Ciuti, A. Bramati, *Light engineering of the polariton landscape in semiconductor microcavities*, **Phys. Rev. B** 82, 081301 (2010)
[51] L. Ferrier, S. Pigeon, E. Wertz, M. Bamba, P. Senellart, I. Sagnes, A. Lemaître, C. Ciuti, J. Bloch, *Polariton parametric oscillation in a single micropillar cavity*, **Appl. Phys. Lett.** 97, 031105 (2010)
[50] D. Hagenmüller, S. De Liberato, and C. Ciuti, *Ultrastrong coupling between a cavity resonator and the cyclotron transition of a two-dimensional electron gas in the case of an integer filling factor*, **Phys. Rev. B** 81, 235303 (2010)
[49] M. Bamba, S. Pigeon, C. Ciuti, *Quantum Squeezing Generation versus Photon Localization in a Disordered Planar Microcavity*, **Phys. Rev. Lett.** 104, 213604 (2010)
[48] P. Nataf, C. Ciuti, *Vacuum degeneracy of a circuit QED system in the ultrastrong coupling regime*, **Phys. Rev. Lett.** 104, 023601 (2010)
[47] S. De Liberato, D. Gerace, I. Carusotto, C. Ciuti, *Extracavity quantum vacuum radiation from a single qubit*, **Phys. Rev. A** 80, 053810 (2009)
[46] A. Amo, J. Lefrere, S. Pigeon, C. Adrados, C. Ciuti, I. Carusotto, R. Houdré, E. Giacobino and A. Bramati, *Superfluidity of Polaritons in Semiconductor Microcavities*, **Nature Physics** 5, 805 (2009)
[45] I. Carusotto, D. Gerace, H. Tureci, S. De Liberato, C. Ciuti and A. Imamoglu, *Fermionized photons in an array of driven dissipative nonlinear cavities*, **Phys. Rev. Lett.** 103, 033601 (2009)
[44] A. A. Anappara, S. De Liberato, A. Tredicucci, C. Ciuti, G. Biasiol, L. Sorba and F. Beltram, *Signatures of ultra-strong light-matter coupling regime*, **Phys. Rev. B** 79, 201303 (2009)
[43] S. De Liberato and C. Ciuti, *Stimulated scattering and lasing of intersubband cavity polaritons*, **Phys. Rev. Lett.** 102, 136403 (2009)
[42] G. Günter, A. A. Anappara, J. Hees, A. Sell, G. Biasiol, L. Sorba, S. De Liberato, C. Ciuti, A. Tredicucci, A. Leitenstorfer, R. Huber, *Sub-cycle switch-on of ultrastrong light–matter interaction,* **Nature** *458,* 178 (2009)
[41] S. De Liberato and C. Ciuti, *Quantum theory of electron tunneling into intersubband cavity polariton states*, **Phys. Rev. B** 79, 075317 (2009)
[40] I. Carusotto, M. Antezza, F. Bariani, S. De Liberato, C. Ciuti, *Optical properties of atomic Mott insulators: From slow light to dynamical Casimir effects*, **Phys. Rev. A** 77, 063621 (2008)
[39] S. De Liberato, C. Ciuti, *Quantum model of microcavity intersubband electroluminescent devices,* **Phys. Rev. B** 77, 155321 (2008)

[38] L. Sapienza, A. Vasanelli, R. Colombelli, C. Ciuti, Y. Chassagneux, C. Manquest, U. Gennser, and C. Sirtori, *Electrically Injected Cavity Polaritons*, **Phys. Rev. Lett.** 100, 136806 (2008)
[37] M. Wouters, I. Carusotto, and C. Ciuti, *Spatial and spectral shape of inhomogeneous nonequilibrium exciton-polariton condensates*, **Phys. Rev. B** 77, 115340 (2008)
[36] A. A. Anappara, A. Tredicucci, F. Beltram, G. Biasiol, L. Sorba, S. De Liberato, and C. Ciuti, *Cavity polaritons from excited-subband transitions*, **Appl. Phys. Lett.** 91, 231118 (2007)
[35] A. Verger, I. Carusotto, C. Ciuti, *Quantum Monte Carlo study of ring-shaped parametric luminescence in a semiconductor microcavity*, **Phys. Rev. B** 76, 115324 (2007) (9 pages)
[34] L. Sapienza, A. Vasanelli, C. Ciuti, C. Manquest, C. Sirtori, R. Colombelli, and U. Gennser, *Photovoltaic probe of cavity polaritons in a quantum cascade structure*, **Appl. Phys. Lett.** 90, 201101 (2007)
[33] S. De Liberato, C. Ciuti, I. Carusotto, *Quantum vacuum radiation spectra from a semiconductor microcavity with a time-modulated vacuum Rabi frequency*, **Phys. Rev. Lett.** 98, 103602 (2007)
[32] C. Ciuti, I. Carusotto, *Input-output theory of cavities in the ultrastrong coupling regime: The case of time-independent cavity parameters*, **Phys. Rev. A** 74, 033811 (2006)
[31] A. Verger, C. Ciuti, I. Carusotto, *Polariton quantum blockade in a photonic dot embedding a quantum well*, **Phys. Rev. B** 73, 193306 (2006)
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[INV_31] Conference on Laser and Electro-Optics Pacific Rim (CLEO-PR 2013), (Kyoto, Japan, June 30 to July 4, 2013)

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[INV_28] POLATOM CAMBRIDGE: (Cambridge, UK, 9–14 September 2012)

[INV_27] Singapore School of Physics "Strong light-matter coupling: from atoms to solid-state systems" (Singapore, 21 May – 8 June 2012)

[INV_26] Workshop on the dynamics and asymptrotics in the Dicke model and quantum networks (Matrahaza, Hungary 3–7 May 2012)

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[INV_24] The Fourth International Workshop on Theoretical and Computational Nano-Photonics, TaCoNa-Photonics 2012 (Physikzentrum, Bad Honnef, Germany, 26–28 October 2011)

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[INV_17] Optics of Excitons in Confined systems (OECS11, Madrid, Spain, September 2009)

[INV_16] Photonics West (San Jose, USA, January 2009)

[INV_15] 2008 Enrico Fermi School, Quantum coherence in solid-state systems, (Varenna, Italy, July 2008)

[INV_14] E-MRS spring meeting (Strasbourg, France, May 2008)

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[INV_4] Conference of Lasers and Electro-Optics (CLEO-QELS 2002, Long Beach, California, USA May 2002)
[INV_3] Optics of Excitons in Confined Systems (OECS7, Montpellier, France, September 2001)
[INV_2] 2001 Meeting on Fundamental Optical Processes in Semiconductors (Girwood, Alaska, USA, August 2001)
[INV_1] 18th Conference of the Condensed Matter Division of the European Physical Society (Montreux, Switzerland, March 2000)