

Procedura di valutazione per la chiamata a professore di I fascia da ricoprire ai sensi dell'art. 24, comma 6, della Legge n. 240/2010 per il settore concorsuale 02/B2 - Fisica Teorica della Materia, (settore scientifico-disciplinare FIS/03 - Fisica della Materia) presso il Dipartimento di Fisica "Aldo Pontremoli", Codice concorso 5353.

Stefano Olivares

CURRICULUM VITAE

INFORMAZIONI PERSONALI

COGNOME	OLIVARES
NOME	STEFANO
DATA DI NASCITA	22/08/1975

ATTIVITÀ E PRINCIPALI RISULTATI SCIENTIFICI

Stefano Olivares is a **theoretician** and works in **quantum optics** and **quantum information** and in the optical implementation of quantum information processing. He has received the PhD in Physics from University of Milan (UNIMI), where he is currently **Associate Professor** at the Dept. of Physics. He is **Degree Course Coordinator** of the Bachelor's degree in Physics (UNIMI) and he teaches **Thermodynamics** (BSc course, 56 hours per a.y.) and **Quantum computing** (MSc course, 42 hours per a.y.).

He has a solid expertise in quantum optics and a specific skill in the phase-space analysis of quantum states and operations with **continuous variables** with applications to quantum communication, quantum key distribution and, more in general, optical quantum technologies.

He was **National Coordinator** of the national research project "Light correlations for high-precision innovative sensing (LiCHIS)" supported by MIUR through the program "FIRB - Futuro in Ricerca 2010" (2012-2015). In 2005 he was awarded the "Le Scienze" award for quantum optics and the medal awarded by the President of the Italian Republic.

The main scientific contributions of Stefano Olivares are in the fields of:

- i) **generation, characterization and application of quantum states;**
- ii) **quantum interferometry and quantum sensing;**
- iii) **dynamics of quantum properties in the presence of decoherence;**
- iv) **estimation of quantum states and operations;**
- v) **quantum communication and quantum key distribution.**

Though Stefano Olivares' activity is mainly theoretical, he is an active collaborator of three Italian **experimental groups** (INRiM, Torino; University of Insubria, Como; University of Milan). He also collaborates with several international theoretical groups (see the list of publications).

Since 2000, he is author or co-author of **155 publications** (140 papers in international peer-reviewed journals, 11 proceedings and 4 books) and his publications received about **3650 citations**, H-index 34, source Scopus 2023, (5500 citations, H-index 39, source Google Scholar 2023).

TITOLI

TITOLO DI STUDIO

23 March 2000, Degree in Physics, University of Milan.

TITOLO DI DOTTORE DI RICERCA O EQUIVALENTI, OVVERO, PER I SETTORI INTERESSATI, DEL DIPLOMA DI SPECIALIZZAZIONE MEDICA O EQUIVALENTE, CONSEGUITO IN ITALIA O ALL'ESTERO

2 February 2004, PhD in Physics, University of Milan.

ATTIVITÀ DIDATTICA

INSEGNAMENTI E MODULI

a.a. 2021-2022

- *Finite Memory Quantum Computational Devices: from Theory to Practice*, PhD School in Computer Science, UNIMI (5 hours).
- *Ottica quantistica*, CdS Magistrale in Fisica, UNIMI (21 hours).
- *Teoria quantistica della computazione*, CdS Magistrale in Fisica, UNIMI (42 hours).
- *Termodinamica*, CdS Triennale in Fisica, UNIMI (56 hours).

a.a. 2020-2021

- *Introduction to Quantum Computing*, PhD School in Physics and Astronomy, UNIMIB (10 hours).
- *Ottica quantistica*, CdS Magistrale in Fisica, UNIMI (21 hours).
- *Teoria quantistica della computazione*, CdS Magistrale in Fisica, UNIMI (42 hours).
- *Termodinamica*, CdS Triennale in Fisica, UNIMI (56 hours).

a.a. 2019-2020

- *Quantum Computing: Theory, Models and Methods - Mathematical and physical foundations of Quantum Computing*, PhD School in Computer Science, UNIMI (5 hours).
- *Ottica quantistica*, CdS Magistrale in Fisica, UNIMI (21 hours).
- *Teoria quantistica della computazione*, CdS Magistrale in Fisica, UNIMI (42 hours).
- *Termodinamica*, CdS Triennale in Fisica, UNIMI (56 hours).

a.a. 2018-2019

- *Ottica quantistica*, CdS Magistrale in Fisica, UNIMI (21 hours).
- *Teoria quantistica della computazione*, CdS Magistrale in Fisica, UNIMI (42 hours).

a.a. 2017-2018

- *Ottica quantistica*, CdS Magistrale in Fisica, UNIMI (21 hours).
- *Teoria quantistica della computazione*, CdS Magistrale in Fisica, UNIMI (42 hours).

a.y. 2016-2017

- *Ottica quantistica*, CdS Magistrale in Fisica, UNIMI (21 hours).
- *Teoria quantistica della computazione*, CdS Magistrale in Fisica, UNIMI (42 hours).

a.a. 2015-2016

- *Calcolatori quantistici*, CdS Magistrale in Fisica, UNIMI (48 hours).

a.a. 2014-2015

- *Calcolatori quantistici*, CdS Magistrale in Fisica, UNIMI (48 hours).
- *“Didattica e laboratorio della Fisica 1”*, *“Fisica moderna e tecnologie quantistiche”*, Tirocinio Formativo Attivo (TFA) 2° Ciclo - Classe A038 - UNIMI (12 hours).

a.a. 2013-2014

- *Quantum Optics in Phase Space and Introduction to Quantum Computing*, PhD School in Physics, Astrophysics and Applied Physics, UNIMI (8 hours).
- *Calcolatori quantistici*, CdS Magistrale in Fisica, UNIMI (48 hours).
- *“Didattica della Fisica 3: Fisica Moderna”*, *“Fisica moderna e tecnologie quantistiche”*, Percorsi Abilitanti Speciali (PAS) - Classe A038 - UNIMI (24 hours).

- a.a. 2012-2013
- *Calcolatori quantistici*, CdS Magistrale in Fisica, UNIMI (48 hours).
 - *“Didattica della Fisica moderna e laboratorio”, “Dal concetto di fotone al teletrasporto quantistico”* Tirocinio Formativo Attivo (TFA) 2° Ciclo - Classe A038 - UNIMI (14 hours).
 - *Advanced Quantum Optics - Gaussian States in Quantum Information*, PhD School in Physics, Astrophysics and Applied Physics, UNIMI (8 hours).
- a.a. 2010-2011
- *Introduction to Gaussian States in Quantum Information*, PhD School in Physics, UNITS (21 hours).

ATTIVITÀ DI DIDATTICA INTEGRATIVA E DI SERVIZIO AGLI STUDENTI

ATTIVITÀ DI RELATORE DI ELABORATI DI LAUREA, DI TESI DI LAUREA MAGISTRALE, DI TESI DI DOTTORATO E DI TESI DI SPECIALIZZAZIONE

Elaborati di Laurea in Fisica, Università degli Studi di Milano

- a.a. 2022-2023
- G. Campanello, *Encoding based on QAM16 and APSK16 constellations for quantum communication* (in corso).
- a.a. 2021-2022
- M. Ferrero, *Homodyne-like discrimination of coherent states with and without geometrically uniform symmetry* (in corso).
 - M. Hoxha, *Grover search with noisy continuous-time quantum walks*.
 - A. Morea, *Noisy entanglement assessment with quantum error correction*.
 - L. Radavelli, *Binary and quaternary coherent state discrimination*.
- a.a. 2020-2021
- M. Algranati, *Thermally driven engine based on a single atom*.
 - D. Mapelli, *Quantum optical correlations in the absence of intensity correlations*.
 - G. Dan Vamanu, *Effect of the relative phases on the Grover search on complete graphs*.
 - E. Zavatti, *Capacity of quantum channels based on photon-number-resolving and homodyne detectors*.
- a.a. 2019-2020
- G. R. Hvaring, *Integer number factorization through quantum adiabatic evolution*.
- a.a. 2018-2019
- A. Daleffe, *Magnetometry with superconducting qubits*.
 - D. Piccioni, *Stroboscopic dynamics of continuous-variable optical systems*.
- a.a. 2017-2018
- A. Carbone, *From superconducting circuits to quantum bits*.
 - M. Fossati, *Discrete-variable quantum key distribution: security of BB84 and E91 protocols*.
- a.a. 2016-2017
- M. Mancini, *Ramsey interferometry for the precise measurement of atomic frequency*.
 - L. Sanfilippo, *Implementation of quantum logic gates and quantum computation with trapped-ion systems*.
- a.a. 2015-2016
- Marco Cattaneo, *Quantum key distribution with coherent states and photon-number-resolving detectors*.
 - A. Papaluca, *Basics of quantum adiabatic computation*.
 - A. Tomella, *Continuous-variable free-space quantum communication*.
 - V. Vento, *Quantum dynamics of a simple avian-compass model in the presence of a RF magnetic field*.
- a.a. 2014-2015
- M. Bertoletti, *Continuous-time quantum walks: beyond the tight-binding model*.
 - G. Campanaro, *Qubits and quantum gates using nuclear magnetic resonance*.
 - M. Opromolla, *A simple quantum model for the avian compass and its sensitivity to the geomagnetic field*.
 - L. Tiberi, *Quantum walks and single-step implementation via linear optics*.
- a.a. 2013-2014
- E. Baratelli, *Algoritmo quantistico di Deutsch in presenza di rumore*.
 - M. Popovic, *Interferometria quantistica con stati ottici non Gaussiani*.

- S. Rossotti, *Bloch oscillations as a resource for quantum computation*.
- L. Sguera, *Homodyne-like receiver with low intensity local oscillator for phase-diffused coherent signal*.

Tesi di Laurea Magistrale in Fisica, Università degli Studi di Milano

a.a. 2020/2021

- E. Radaelli, *Quantum key distribution assisted by quantum walks*.
- M. Radaelli, *Random number generation based on quantum walks on graphs*.
- M. N. Notarnicola, *Improving noisy phase estimation with real optical parametric oscillators*.
- C. Travaglini, *Conservation of orbital angular momentum in realistic two-photon entangled states*.

a.a. 2018-2019

- G. Carrara, *Squeezed-enhanced optical phase estimation in the presence of phase-noise*.
- B. Scaparra, *Towards an ideal single photon source based on resonantly driven InGaAs quantum dots*.

a.a. 2017-2018

- G. Campanaro, *Experimental realization of a travelling wave parametric amplifier for superconducting qubits readout*.

a.a. 2015-2016

- G. Papotti, *Lackadaisical discrete-time quantum walks*.

a.a. 2014-2015

- G. Chesi, *Phase-shifted realistic binary channel using displaced squeezed states*.

a.a. 2013-2014

- S. Maffezzoli-Felis, *Superconducting qubits coupled through a resonator within the quantum Rabi model framework*.
- A. Rebolini, *Full open quantum dynamics of a qubit ultrastrongly coupled to a resonator*.
- S. Sala, *Antimatter wave interferometry with e^+ , positronium and \bar{p}* .

Tesi di Dottorato in Fisica, Università degli Studi di Milano

- M. N. Notarnicola, *Optical Systems for Current and Near-future Quantum Technologies (37th CYCLE)*. (In corso)
- S. Altília, *Quantum Communication for Power Systems (38th CYCLE)*. (In corso)

VALUTAZIONE DI TESI E PARTECIPAZIONE A COMMISSIONI DI DOTTORATO DI RICERCA PER ALTRI ATENEI NAZIONALI E INTERNAZIONALI (ADVISING)

- **Evaluator** of a PhD thesis in Physics at the Faculty of Mathematics and Natural Sciences, University of Turku, Finland (2012).
- **Reviewer** of a PhD thesis in Physics and Astrophysics at the University of Insubria, Como, Italy (2017).
- **Pre-examiner** of a PhD thesis in Physics at the Faculty of Mathematics and Natural Sciences, University of Turku, Finland (2019).
- **Evaluator and Examiner** of a PhD thesis in Physics at the University of Turin, Italy (2019).
- **External examiner** of a PhD thesis in Physics at the Queen's University Belfast, Belfast UK (2019).
- **Evaluator** of a PhD thesis in Physics at the Faculty of Mathematics and Natural Sciences, University of Turku, Finland (2020).
- **Examiner** of a PhD thesis in Physics at the Indian Institute of Technology Jodhpur, India (2020).
- **Evaluator and Examiner** of a PhD thesis in Physics at the Politecnico di Torino, Italy (2021).
- **Reviewer** of a PhD thesis in Physics at the University of Bari, Italy (2021).
- **Reviewer** of a PhD thesis in Physics at the University of Naples "Federico II", Italy (2022).
- **Evaluator and Examiner** of a PhD thesis in Physics at the Politecnico di Torino, Italy (2023).
- **Evaluator and Examiner** of a PhD thesis in Physics at the University of Pavia, Italy (2023).

SEMINARI SU INVITO PRESSO ENTI, SCUOLE E UNIVERSITÀ NAZIONALI E INTERNAZIONALI

- 13 May 2023 - IIS "E. Alessandrini", Vittuone (Italy). *Dalla termodinamica classica al concetto di "quanto di energia" seguendo le strade di Planck e Einstein.*
- 9 May 2023 - Centro Culturale "Cardinal Ferrari", Vittuone (Italy). *La meraviglia del mondo: la fisica quantistica intorno a noi.*
- 19 April 2023 - Italian Quantum Weeks, Milano (Italy). *Dalla termodinamica classica al concetto di "quanto di energia" seguendo le strade di Planck e Einstein.*
- 22 November 2022 - Fondazione Collegio di Milano, Milano (Italy). *From classical thermodynamics to the concept of "quantum" following Planck's and Einstein's routes.*
- 4 June 2022 - IIS "E. Alessandrini", Vittuone (Italy). *Max Planck: la prima rivoluzione quantistica.*
- 7 April 2022 - Italian Quantum Weeks 2022, Milano (Italy). *La foglia e il computer quantistico: la meccanica quantistica intorno a noi.*
- 22 February 2022 - **Physics colloquium**, Phd School in Physics and Astrophysics, Università degli Studi dell'Insubria. *Squeezed light and its applications from interferometers to quantum metrology.*
- 18 September 2020 – "Officina di didattica e divulgazione della Fisica - Tecnologie Quantistiche", Como (Italy). *I computer quantistici.*
- 11 May 2019 - IIS "E. Alessandrini", Vittuone (Italy). *Max Planck: la rivoluzione quantistica.*
- 28 June 2019 - Centre for Theoretical Atomic, Molecular, and Optical Physics, Queen's University Belfast (UK). *Squeezing (and) phase diffusion: recent theoretical and experimental results.*
- 6 June 2018 - TeCIP Institute, School of Advanced Studies Sant'Anna, Pisa (Italy). *Hybrid quantum key distribution using coherent states and photon number resolving detectors.*
- 28 May 2018 - Open Day di Ateneo, Università degli Studi di Milano, Milano (Italy). *La meccanica quantistica: dalle origini alle tecnologie quantistiche di oggi e di domani.*
- 19 May 2018 - IIS "E. Alessandrini", Vittuone (Italy). *Max Planck: la rivoluzione quantistica.*
- 1 April 2018 - Hands-on Workshop on Quantum Software on Real Quantum Computers, Department of Physics, University of Milano in collaboration with IBM (Italy). *Basics of quantum computing: The quantum circuit representation & simple algorithms.*
- 20 April 2017 - Dipartimento di Matematica e Fisica, Università del Salento, Lecce (Italy). *La meccanica quantistica: dalle origini alle tecnologie quantistiche di oggi e di domani.*
- 29 November 2016 - The Big Bell Test, Dipartimento di Fisica, Università degli Studi di Milano (Italy). *Quantum mechanics, a short journey.*
- 29 October 2015 - Dipartimento di Matematica e Fisica, Università del Salento, Lecce (Italy). *Quantum interferometry with Gaussian states and operations: the ultimate bounds to precision.*
- 29 October 2015 - Dipartimento di Matematica e Fisica, Università del Salento, Lecce (Italy). *Quantum information: a brief introduction.*
- 17 September 2015 - **Olimpiadi Italiane di Informatica**, Castiglione dei Pepoli (Italy). *Quantum computation (keynote speaker).*
- 18 December 2014 - Dipartimento di Scienza e Alta Tecnologia, Università degli Studi dell'Insubria, Como (Italy). *Introduction to generation, manipulation and characterization of optical quantum states - part II.*
- 16 December 2014 - Dipartimento di Scienza e Alta Tecnologia, Università degli Studi dell'Insubria, Como (Italy). *Introduction to generation, manipulation and characterization of optical quantum states - part I.*
- 27 April 2013 - Liceo Scientifico "D. Bramante", Magenta (Italy). *Fotoni ed atomi: un (non proprio breve) viaggio nel mondo quantistico.*
- 4 - 8 February 2013 - Invited speaker at "QSNOW2013 - Winter school in quantum communications", Asiago (Italy). *A short introduction to Gaussian states (GS). Interference of GS: the birth of entanglement. GS and homodyne detection. Quantum key distribution with GS.*
- 29 June 2012 - Dipartimento di Fisica e Matematica, Università degli Studi dell'Insubria, Como (Italy). *Gaussian states and homodyne detection.*
- 23 June 2011 - "Problemi di Fisica Teorica: convegno per gli 80 anni di G. M. Prosperi", Dipartimento di Fisica, Università degli Studi di Milano (Italy). *The birth of entanglement in the interference of Gaussian states.*
- 27 April 2011 - Dipartimento di Fisica, Università degli Studi di Trieste, Trieste (Italy). *The birth of entanglement in the interference of Gaussian states: the role of the fidelity.*

- 10 September 2010 - Department of Physics, University of Turku, Turku (Finland). *Qubit phase estimation in the presence of noise: the Bayesian approach*.
- 1 April 2010 - INRiM, Torino (Italy). *Quantum illumination: an overview*.
- 17 February 2010 - Liceo Scientifico "D. Bramante", Magenta (Italy). *La fisica quantistica: una breve introduzione*.
- 20 May 2009 - Caffè Scientifici, FNAC Milano (Italy). *Il mondo dei quanti: perché niente è più vero della fantasia*.
- 23 April 2009 - Liceo Scientifico "D. Bramante", Magenta (Italy). *La luce: dall'altalena... al computer quantistico*.
- 4 March 2008 - INRiM, Torino, (Italy). *Quantum estimation: two approaches*.
- 8 April 2006 - Liceo Scientifico "D. Bramante", Magenta (Italy). *Dai quanti di luce al teletrasporto quantistico*.
- 20 April 2004 - Liceo Scientifico "D. Bramante", Magenta (Italy). *Quanti di Luce (Fotoni) - Una Introduzione Informale alla Nascita della Meccanica Quantistica*. Meccanica Quantistica e "Senso Comune".
- 2 May 2003 - Liceo Scientifico "D. Bramante", Magenta (Italy). *Quanti di Luce (Fotoni) - Una Introduzione Informale alla Nascita della Meccanica Quantistica*. Meccanica Quantistica e "Senso Comune".

ATTIVITÀ DI RICERCA SCIENTIFICA

PUBBLICAZIONI SCIENTIFICHE

From 2000, **155 publications** (140 papers in international peer-reviewed journals, 11 proceedings and 4 books).

ORCID: <https://orcid.org/0000-0002-9251-0731>

His publications received about **3650 citations**, **H-index 34**, source Scopus 2023 (**5500 citations**, **H-index 39**, source Google Scholar 2023).

Publications in scientific journals

140. M. N. Notarnicola and S. Olivares, *Long-distance continuous-variable quantum key distribution with feasible physical noiseless linear amplifier*, to appear in Phys. Rev. A (2023), preprint arXiv:2305.10976 [quant-ph]
139. M. N. Notarnicola, M. G. A. Paris and S. Olivares, *Hybrid near-optimum binary receiver with realistic photon-number-resolving detectors*, J. Opt. Soc. Am. B **40**, 705-714 (2023)
138. A. Morea, M. N. Notarnicola and S. Olivares, *Entanglement recovery in noisy binary quantum information protocols via three-qubit quantum error correction codes*, Int. J. Quant. Inf., 2340002 (15 pages) (2023)
137. M. Frigerio, S. Olivares and M. G. A. Paris, *Cost-effective temperature estimation strategies for thermal states with probabilistic quantum metrology*, Quantum Sci. Technol. **7**, 035011 (13 pages) (2022)
136. M. N. Notarnicola, M. G. Genoni, S. Cialdi, M. G. A. Paris and S. Olivares, *Phase noise mitigation by a realistic optical parametric oscillator*, J. Opt. Soc. Am. **39**, 1059-1067 (2022)
135. M. Frigerio, C. Benedetti, S. Olivares and M. G. A. Paris, *Quantum-classical distance as a tool to design optimal chiral quantum walk*, Phys. Rev. A **105**, 032425 (15 pages) (2022)
134. M. Frigerio, C. Destri, S. Olivares and M. G. A. Paris, *Quantum steering with Gaussian states: A tutorial*, Phys. Lett. A **430**, 127954 (10 pages) (2022)
133. F. Benatti, S. Olivares, G. Perosa, D. Bajoni, S. Di Mitri, R. Floreanini, L. Ratti and F. Parmigiani, *Quantum state features of the FEL radiation from the occupation number statistics*, Opt. Express **29**, 40434 (23 pages) (2021)
132. S. Cialdi, E. Suerra, M. G. A. Paris and S. Olivares, *Technique for active stabilization of the relative phase between seed and pump in an optical parametric oscillator*, Phys. Rev. A **104**, 053706 (9 pages) (2021)
131. A. Candeloro, S. Razavian, M. Piccolini, Berihu Teklu, S. Olivares and M. G. A. Paris, *Quantum probes for the characterization of nonlinear media*, Entropy **23**, 1353 (13 pages) (2021)
130. F. Mattiotti, W. M. Brown, N. Piovella, S. Olivares, E. M. Gauger and G. L. Celardo, *Bio-inspired natural sunlight-pumped lasers*, New J. Phys. **23**, 103015 (16 pages) (2021)
129. S. Olivares, *Introduction to generation, manipulation and characterization of optical quantum states*, Phys. Lett. A **418**, 127720 (15 pages) (2021)
128. A. Candeloro, C. Mereghetti, B. Palano, S. Cialdi, M. G. A. Paris and S. Olivares, *An enhanced photonic quantum finite automaton*, Appl. Sci. **11**, 8768 (12 pages) (2021)
127. M. Frigerio, C. Benedetti, S. Olivares and M. G. A. Paris, *Generalized quantum-classical correspondence for random walks on graphs*, Phys. Rev. A **104**, L030201 (5 pages) (2021)

126. M. Frigerio, S. Olivares and M. G. A. Paris, *Steering nonclassicality of Gaussian states*, Phys. Rev. A **103**, 022209 (16 pages) (2021)
125. M. G. A. Paris, C. Benedetti and S. Olivares, *Improving quantum search on simple graphs by pretty good, structured oracles*, Symmetry **13**, 96 (8 pages) (2021)
124. G. Carrara, M. G. Genoni, S. Cialdi, M. G. A. Paris and S. Olivares, *Squeezing as a resource to counteract phase diffusion in optical phase estimation*, Phys. Rev. A **102**, 062610 (7 pages) (2020)
123. S. Cialdi, E. Suerra, S. Olivares, S. Capra and M. G. A. Paris, *Squeezing phase diffusion*, Phys. Rev. Lett. **124**, 163601 (6 pages) (2020)
122. S. Olivares, A. Allevi and M. Bondani, *On the role of the local oscillator intensity in optical homodyne-like tomography*, Phys. Lett. A **384**, 126354 (6 pages) (2020)
121. C. Benedetti, V. Vento, S. Olivares, M. G. A. Paris and S. Cialdi, *Experimental realization of a local-to-global noise transition in a two-qubit optical simulator*, Phys. Rev. A **101**, 032348 (7 pages) (2020)
120. C. Mereghetti, B. Palano, S. Cialdi, V. Vento, M. G. A. Paris and S. Olivares, *Photonic realization of a quantum finite automaton*, Phys. Rev. Research **2**, 013089 (15 pages) (2020)
119. S. Cialdi, C. Benedetti, D. Tamascelli, S. Olivares, M. G. A. Paris and B. Vacchini, *Experimental investigation of the effect of classical noise on quantum non-Markovian dynamics*, Phys. Rev. A **100**, 052104 (7 pages) (2019)
118. S. Olivares, A. Allevi, G. Caiazzo, M. G. A. Paris and M. Bondani, *Quantum tomography of light states by photon-number-resolving detectors*, New J. Phys. **21**, 103045 (10 pages) (2019)
117. D. Ferracin, A. Mattioni, S. Olivares, F. Caycedo-Soler and D. Tamascelli, *Which-way interference within ringlike unit cells for efficient energy transfer*, Phys. Rev. A **99**, 062505 (9 pages) (2019)
116. M. Cattaneo, M. G. A. Paris and S. Olivares, *Hybrid quantum key distribution using coherent states and photon-number-resolving detectors*, Phys. Rev. A **98**, 012333 (5 pages) (2018)
115. S. Olivares, S. Cialdi and M. G. A. Paris, *Homodyning the $g^{(2)}(0)$ of Gaussian states*, Opt. Commun. **426**, 547-552 (2018)
114. C. Porto, D. Rusca, S. Cialdi, A. Crespi, R. Osellame, D. Tamascelli, S. Olivares and M. G. A. Paris, *Detection of squeezed light with glass- integrated technology embedded into a homodyne detector setup*, J. Opt. Soc. Am. B **35**, 1596-1602 (2018)
113. S. Olivares, *High-precision innovative sensing with continuous-variable optical states*, Riv. Nuovo Cimento **41**, 341-382 (2018)
112. G. Chesi, S. Olivares and M. G. A. Paris, *Squeezing-enhanced phase-shift-keyed binary communication in noisy channels*, Phys. Rev. A **97**, 032315 (6 pages) (2018)
111. A. Allevi, M. Bina, S. Olivares and M. Bondani, *Homodyne-like detection scheme based on photon-number-resolving detectors*, Int. J. Quant. Inf. **15**, 1740016 (11 pages) (2017)
110. F. Benatti, R. Floreanini, S. Olivares and E. Sindici, *Noisy effects in interferometric quantum gravity tests*, Int. J. Quant. Inf. **15**, 1740014 (15 pages) (2017)
109. M. A. C. Rossi, C. Benedetti, D. Tamascelli, S. Cialdi, S. Olivares, B. Vacchini and M. G. A. Paris, *Non-Markovianity by undersampling in quantum optical simulators*, Int. J. Quant. Inf. **15**, 1740009 (11 pages) (2017)
108. D. Tamascelli, A. Segati and S. Olivares, *Dephasing assisted transport on a biomimetic ring structure*, Int. J. Quant. Inf. **15**, 1740006 (11 pages) (2017)
107. M. Bina, A. Allevi, M. Bondani and S. Olivares, *Homodyne-like detection for coherent state-discrimination in the presence of phase noise*, Opt. Express **25**, 10685-10692 (2017)
106. S. Cialdi, M. A. C. Rossi, C. Benedetti, B. Vacchini, D. Tamascelli, S. Olivares and M. G. A. Paris, *All-optical quantum simulator of qubit noisy channels*, Appl. Phys. Lett. **110**, 081107 (4 pages) (2017)
105. A. Pecoraro, D. Buono, G. Nocerino, A. Porzio, S. Olivares and M. G. A. Paris, *Experimental pre-assessing of two-mode entanglement in Gaussian state mixing*, J. Opt. Soc. Am. B **34**, 404-411 (2017)
104. Z. Mazzotta, S. Cialdi, D. Cipriani, S. Olivares and M. G. A. Paris, *High-order dispersion effects in two-photon interference*, Phys. Rev. A **94**, 063842 (6 pages) (2016)
103. D. Tamascelli, C. Benedetti, S. Olivares and M. G. A. Paris, *Characterization of qubit chains by Feynman probes*, Phys. Rev. A **94**, 042129 (8 pages) (2016)
102. S. Sala, M. Giammarchi and S. Olivares, *Asymmetric Talbot-Lau interferometry for inertial sensing*, Phys. Rev. A **94**, 033625 (13 pages) (2016)
101. A. Mandarino, M. Bina, C. Porto, S. Cialdi, S. Olivares and M. G. A. Paris, *Assessing the significance of fidelity as a figure of merit in quantum state reconstruction of discrete and continuous-variable systems*, Phys. Rev. A **93**, 062118 (10 pages) (2016)

100. D. Tamascelli, S. Olivares, S. Rossotti, R. Osellame and M. G. A. Paris, *Quantum state transfer via Bloch oscillations*, Sci. Rep. **6**, 26054 (7 pages) (2016)
99. M. Bina, A. Allevi, M. Bondani and S. Olivares, *Phase-reference monitoring in coherent-state discrimination assisted by a photon-number resolving detector*, Sci. Rep. **6**, 26025 (9 pages) (2016)
98. S. Olivares, M. Popovic and M. G. A. Paris, *Phase estimation with squeezed single photons*, Quantum Meas. Quantum Metrol. **3**, 38-43 (2016)
97. S. Cialdi, C. Porto, D. Cipriani, S. Olivares and M. G. A. Paris, *Full quantum state reconstruction of symmetric two-mode squeezed thermal states via spectral homodyne detection and a state-balancing detector*, Phys. Rev. A **93**, 043805 (7 pages) (2016)
96. C. Sparaciari, S. Olivares and M. G. A. Paris, *Gaussian-state interferometry with passive and active elements*, Phys. Rev. A **93**, 023810 (13 pages) (2016)
95. I. Ruo Berchera, I. P. Degiovanni, S. Olivares, N. Samantaray, P. Traina and M. Genovese, *One- and two-mode squeezed light in correlated interferometry*, Phys. Rev. A **92**, 053821 (8 pages) (2015)
94. S. Sala, F. Castelli, M. Giammarchi, S. Siccardi and S. Olivares, *Matter-wave interferometry: towards antimatter interferometers*, J. Phys. B: At. Mol. Opt. Phys. **48**, 195002 (10 pages) (2015)
93. J. Trapani, Berihu Teklu, S. Olivares, and M. G. A. Paris, *Quantum phase communication channels in the presence of static and dynamical phase diffusion*, Phys. Rev. A **92**, 012317 (7 pages) (2015)
92. Berihu Teklu, J. Trapani, S. Olivares and M. G. A. Paris, *Noisy quantum phase communication channels*, Phys. Scr. **90**, 074027 (6 pages) (2015)
91. M. Brunelli, C. Benedetti, S. Olivares, A. Ferraro and M. G. A. Paris, *Single- and two-mode quantumness at a beam splitter*, Phys. Rev. A **91**, 062315 (11 pages) (2015)
90. C. Sparaciari, S. Olivares and M. G. A. Paris, *Bounds to precision for quantum interferometry with Gaussian states and operations*, J. Opt. Soc. Am. B **32**, 1354-1359 (2015)
89. M. G. Genoni, M. Bina, S. Olivares, G. De Chiara and M. Paternostro, *Squeezing of mechanical motion via qubit-assisted control*, New J. Phys. **17**, 013034 (9 pages) (2015)
88. M. Mondin, F. Daneshgaran, I. Bari, M. T. Delgado, S. Olivares and M. G. A. Paris, *Soft-metric-based channel decoding for photon counting receivers*, IEEE J. Sel. Top. Quantum Electron. **21**, 6400407 (7 pages) (2015)
87. M. Bina and S. Olivares, *Intensity correlations from linear interactions*, Quantum Meas. Quantum Metrol. **2**, 50-55 (2014)
86. M. Bina, S. Maffezzoli Felis and S. Olivares, *Entanglement generation in the ultra-strongly coupled Rabi model*, Int. J. Quant. Inf. **12**, 1560016 (11 pages) (2014)
85. S. Cialdi, A. Smirne, M. G. A. Paris, S. Olivares and B. Vacchini, *Two-step procedure to discriminate discordant from classical correlated or factorized states*, Phys. Rev. A **90**, 050301(R) (5 pages) (2014)
84. S. Ragy, I. Ruo Berchera, I. P. Degiovanni, S. Olivares, M. G. A. Paris, G. Adesso and M. Genovese, *Quantifying the source of enhancement in experimental continuous variable quantum illumination*, J. Opt. Soc. Am. B **31**, 2045-2050 (2014)
83. A. Allevi, S. Olivares and M. Bondani, *Bracket states for communication protocols with coherent states*, Int. J. Quant. Inf. **12**, 1461018 (9 pages) (2014)
82. A. Mandarino, M. Bina, S. Olivares and M. G. A. Paris, *About the use of fidelity in continuous variable systems*, Int. J. Quant. Inf. **12**, 1461015 (9 pages) (2014)
81. C. Sparaciari, S. Olivares, F. Ticozzi and M. G. A. Paris, *Exact and approximate solutions for the quantum minimum-Kullback-entropy estimation problem*, Phys. Rev. A **89**, 042124 (8 pages) (2014)
80. M. Esposito, F. Benatti, R. Floreanini, S. Olivares, F. Randi, K. Titimbo, M. Pividori, F. Novelli, F. Cilento, F. Parmigiani and D. Fausti, *Pulsed homodyne Gaussian quantum tomography with low detection efficiency*, New J. Phys. **16**, 043004 (15 pages) (2014)
79. M. L. Palma, J. Stammers, M. G. Genoni, T. Tufarelli, S. Olivares, M. S. Kim and M. G. A. Paris, *Detecting quantum non-Gaussianity of noisy Schrödinger cat states*, Phys. Scr. **T160**, 014035 (4 pages) (2014)
78. E. P. Lopaeva, I. Ruo Berchera, S. Olivares, G. Brida, I. P. Degiovanni and M. Genovese, *A detailed description of the experimental realization of a quantum illumination protocol*, Phys. Scr. **T160**, 014026 (6 pages) (2014)
77. S. Olivares, A. Allevi and M. Bondani, *Gaussian and non-Gaussian operations on non-Gaussian state: engineering non-Gaussianity*, Quantum Meas. Quantum Metrol. **2**, 1-10 (2014)
76. M. Bina, A. Mandarino, S. Olivares and M. G. A. Paris, *Drawbacks of the use of fidelity to assess quantum resources*, Phys. Rev. A **89**, 012305 (6 pages) (2014)

75. A. Cazzaniga, S. Maniscalco, S. Olivares and M. G. A. Paris, *Dynamical paths and universality in continuous-variable open systems*, Phys. Rev. A **88**, 032121 (7 pages) (2013)
74. A. Allevi, M. Bondani, P. Marian, T. A. Marian and S. Olivares, *Characterization of phase-averaged coherent states*, J. Opt. Soc. Am. B **30**, 2621-2627 (2013)
73. A. Meda, S. Olivares, I. P. Degiovanni, G. Brida, M. Genovese and M. G. A. Paris, *Revealing interference by continuous variable discordant states*, Optics Letters **38**, 3099-3102 (2013)
72. M. G. Genoni, M. L. Palma, T. Tufarelli, S. Olivares, M. S. Kim and M. G. A. Paris, *Detecting quantum non-Gaussianity via the Wigner function*, Phys. Rev. A **87**, 062104 (9 pages) (2013)
71. I. Ruo Berchera, I. P. Degiovanni, S. Olivares and M. Genovese, *Quantum light in coupled interferometers for quantum gravity tests*, Phys. Rev. Lett. **110**, 213601 (5 pages) (2013)
70. S. Olivares, S. Cialdi, F. Castelli and M. G. A. Paris
Homodyne detection as a near-optimum receiver for phase-shift keyed binary communication in the presence of phase diffusion, Phys. Rev. A **87**, 050303(R) (4 pages) (2013)
69. E. D. Lopaeva, I. Ruo Berchera, I. P. Degiovanni, S. Olivares, G. Brida and M. Genovese, *Experimental realization of quantum illumination*, Phys. Rev. Lett. **110**, 153603 (5 pages) (2013)
68. G. Brida, I. P. Degiovanni, M. Genovese, A. Meda, S. Olivares and M. Paris, *The illusionist game and hidden correlations*, Phys. Scr. **T153**, 014006 (5 pages) (2013)
67. S. Olivares and M. G. A. Paris, *The balance of quantum correlations for a class of feasible tripartite continuous variable states*, Int. J. Mod. Phys. B **27**, 1345024 (10 pages) (2013)
66. M. Brunelli, S. Olivares, M. Paternostro and M. G. A. Paris, *Estimation of purity for a quantum harmonic oscillator initially prepared in a displaced thermal state*, Int. J. Quant. Inf. **10**, 1241015 (10 pages) (2012)
65. A. Allevi, S. Olivares and M. Bondani, *Experimental quantification of non-Gaussianity of phase-randomized coherent states*, Int. J. Quant. Inf. **10**, 1241006 (9 pages) (2012)
64. S. Olivares, *Interference of multi-mode Gaussian states and “non appearance” of quantum correlations*, Int. J. Quant. Inf. **10**, 1241004 (11 pages) (2012)
63. A. Allevi, S. Olivares and M. Bondani, *High-order photon-number correlations: a resource for characterization and applications of quantum states*, Int. J. Quant. Inf. **10**, 1241003 (8 pages) (2012)
62. F. Benatti, R. Floreanini and S. Olivares, *Non-divisibility and non-Markovianity in a Gaussian dissipative dynamics*, Phys. Lett. A **376**, 2951-2954 (2012)
61. A. Allevi, S. Olivares and M. Bondani, *Manipulating the non-Gaussianity of phase-randomized coherent states*, Opt. Express **20**, 24850-24855 (2012)
60. M. Brunelli, S. Olivares, M. Paternostro and M. G. A. Paris, *Qubit-assisted thermometry of a quantum harmonic oscillator*, Phys. Rev. A **86**, 012125 (7 pages) (2012)
59. A. Allevi, S. Olivares and M. Bondani, *Measuring high-order photon-number correlations in experiments with multimode pulsed quantum states*, Phys. Rev. A **85**, 063835 (5 pages) (2012)
58. M. G. Genoni, S. Olivares, D. Brivio, S. Cialdi, D. Cipriani, A. Santamato, S. Vezzoli and M. G. A. Paris, *Optical interferometry in the presence of large phase diffusion*, Phys. Rev. A **85**, 043817 (5 pages) (2012)
57. S. Olivares and M. G. A. Paris, *About the probability distribution of a quantity with given mean and variance*, Metrologia **49**, L14-L16 (2012)
56. S. Olivares and M. G. A. Paris, *Quantum estimation of states and operations from incomplete data*, Eur. Phys. J. Special Topics **203**, 185-192 (2012)
55. S. Olivares, *Quantum optics in the phase space - A tutorial on Gaussian states*, Eur. Phys. J. Special Topics **203**, 3-24 (2012)
54. S. Olivares, *Dynamics of the quantum correlations of two interfering Gaussian states*, Int. J. Quant. Inf. **9**, 1727-1736 (2011)
53. S. Olivares and M. G. A. Paris, *Fidelity matters: the birth of entanglement in the mixing of Gaussian states*, Phys. Rev. Lett. **107**, 170505 (4 pages) (2011)
52. F. Benatti, R. Floreanini, M. Genovese and S. Olivares, *Quantum contextuality in N-boson systems*, Phys. Rev. A **84**, 034102 (4 pages) (2011)
51. M. Brunelli, S. Olivares and M. G. A. Paris, *Qubit thermometry for micromechanical resonators*, Phys. Rev. A **84**, 032105 (9 pages) (2011)
50. R. Vasile, S. Olivares, M. G. A. Paris and S. Maniscalco, *Continuous-variable quantum key distribution in non-Markovian channels*, Phys. Rev. A **83**, 042321 (6 pages) (2011)

49. M. G. Genoni, S. Olivares and M. G. A. Paris, *Optical phase estimation in the presence of phase diffusion*, Phys. Rev. Lett. **106**, 153603 (4 pages) (2011)
48. E. Tesio, S. Olivares and M. G. A. Paris, *Optimized qubit phase estimation in noisy quantum channels*, Int. J. Quant. Inf. **9**, 379-387 (2011)
47. S. Olivares, M. Sedláč, P. Rapčan, M. G. A. Paris and V. Bužek, *Optimal unambiguous comparison of two unknown squeezed vacua*, Phys. Rev. A **83**, 012313 (7 pages) (2011)
46. G. Brida, M. Genovese, M. Gramegna, A. Meda, F. Piacentini, P. Traina, E. Predazzi, S. Olivares and M. G. A. Paris, *Quantum state reconstruction using binary data from on/off photodetection*, Adv. Sci. Lett. **4**, 1-11 (2011)
45. A. Allevi, A. Andreoni, M. Bondani, F. A. Beduini, M. G. Genoni, S. Olivares and M. G. A. Paris, *Conditional measurements on multimode pairwise entangled states from spontaneous parametric downconversion*, Europhys. Lett. **92**, 20007 (6 pages) (2010)
44. Berihu Teklu, M. G. Genoni, S. Olivares and M. G. A. Paris, *Phase estimation in the presence of phase diffusion: the qubit case*, Phys. Scr. **T140**, 014062 (3 pages) (2010)
43. V. D'Auria, S. Fornaro, A. Porzio, S. Solimeno, S. Olivares and M. G. A. Paris, *Characterization of bipartite Gaussian states from OPO*, Phys. Scr. **T140**, 014018 (4 pages) (2010)
42. M. G. Genoni, F. A. Beduini, A. Allevi, M. Bondani, S. Olivares and M. G. A. Paris, *Non-Gaussian states by conditional measurements*, Phys. Scr. **T140**, 014007 (5 pages) (2010)
41. A. Allevi, A. Andreoni, M. Bondani, M. G. Genoni and S. Olivares, *Reliable source of conditional states from single-mode pulsed thermal fields by multiple-photon subtraction*, Phys. Rev. A **82**, 013816 (8 pages) (2010)
40. R. Vasile, P. Giorda, S. Olivares, M. G. A. Paris and S. Maniscalco, *Nonclassical correlations in non-Markovian continuous-variable systems*, Phys. Rev. A **82**, 012313 (10 pages) (2010)
39. D. Buono, G. Nocerino, V. D'Auria, A. Porzio, S. Olivares and M. G. A. Paris, *Quantum characterization of bipartite Gaussian states*, J. Opt. Soc. Am. B **27**, A110-A118 (2010)
38. D. Brivio, S. Cialdi, S. Vezzoli, B. Teklu, M. G. Genoni, S. Olivares and M. G. A. Paris, *Experimental estimation of one-parameter qubit gates in the presence of phase diffusion*, Phys. Rev. A **81**, 012305 (7 pages) (2010)
37. R. Vasile, S. Olivares, M. G. A. Paris and S. Maniscalco, *Continuous-variable-entanglement dynamics in structured reservoirs*, Phys. Rev. A **80**, 062324 (11 pages) (2009)
36. S. Olivares and M. G. A. Paris, *Entanglement-induced invariance in bilinear interactions*, Phys. Rev. A **80**, 032329 (7 pages) (2009)
35. A. Allevi, A. Andreoni, M. Bondani, G. Brida, M. Genovese, M. Gramegna, S. Olivares, M. G. A. Paris, P. Traina and G. Zambra, *State reconstruction by on/off measurements*, Phys. Rev. A **80**, 022114 (5 pages) (2009)
34. J. Řeháček, S. Olivares, D. Mogilevtsev, Z. Hradil, M. G. A. Paris, S. Fornaro, V. D'Auria, A. Porzio and S. Solimeno, *Effective method to estimate multidimensional Gaussian states*, Phys. Rev. A **79**, 032111 (7 pages) (2009)
33. G. Brida, M. Genovese, A. Meda, S. Olivares, M. G. A. Paris and F. Piacentini, *Constrained MaxLik reconstruction of multimode photon distributions*, J. Mod. Opt. **56**, 196-200 (2009)
32. S. Olivares and M. G. A. Paris, *Bayesian estimation in homodyne interferometry*, J. Phys. B: At. Mol. Opt. Phys. **42**, 055506 (7 pages) (2009)
31. G. Brida, M. Genovese, M. Gramegna, P. Traina, E. Predazzi, S. Olivares and M. G. A. Paris, *Toward a full reconstruction of density matrix by on/off measurements*, Int. J. Quant. Inf. **7**, 27-32 (2009)
30. Berihu Teklu, S. Olivares and M. G. A. Paris, *Bayesian estimation of one-parameter qubit gates*, J. Phys. B: At. Mol. Opt. Phys. **42**, 033502 (6 pages) (2009)
29. V. D'Auria, S. Fornaro, A. Porzio, S. Solimeno, S. Olivares and M. G. A. Paris, *Full characterization of Gaussian bipartite entangled states by a single homodyne detector*, Phys. Rev. Lett. **102**, 020502 (4 pages) (2009)
28. S. Olivares and M. G. A. Paris, *Optimal continuous variable telecloning with bright entangled beams*, Eur. Phys. J. Special Topics **160**, 319-330 (2008)
27. S. Olivares, F. Casagrande, A. Lulli and M. G. A. Paris, *Reconstruction of the photon distribution in a micromaser*, Europhys. Lett. **80**, 64002 (6 pages) (2007)
26. S. Olivares and M. G. A. Paris, *Quantum estimation via the minimum Kullback entropy principle*, Phys. Rev. A **76**, 042120 (7 pages) (2007)
25. S. Olivares, *Selective cloning of Gaussian states by linear optics*, Phys. Rev. A **76**, 022305 (6 pages) (2007)
24. S. Olivares and M. G. A. Paris, *Optimized interferometry with Gaussian states*, Opt. Spectrosc. **103**, 231-236 (2007)

23. S. Maniscalco, S. Olivares and M. G. A. Paris, *Entanglement oscillations in non-Markovian quantum channels*, Phys. Rev. A **75**, 062119 (5 pages) (2007)
22. S. Olivares and M. G. A. Paris, *Improving information/disturbance and estimation/distortion trade-offs with non universal protocols*, J. Phys. A: Math. Theor. **40**, 7945-7954 (2007)
21. S. Salvini, S. Olivares and M. G. A. Paris, *Sensitivity of Hilbert and Bures distances to qubit perturbations*, Int. J. Quant. Inf. **5**, 119-124 (2007)
20. A. Porzio, V. D'Auria, S. Solimeno, S. Olivares and M. G. A. Paris, *Homodyne characterization of continuous variable bipartite states*, Int. J. Quant. Inf. **5**, 63-68 (2007)
19. S. Salvini, S. Olivares and M. G. A. Paris, *Distances between qubits and sensitivity to perturbations*, Laser Physics **17**, 552-558 (2007)
18. S. Olivares, M. G. A. Paris and U. L. Andersen, *Optimal cloning of coherent states by linear optics*, Acta Phys. Hung. A **26**, 293-299 (2006)
17. S. Olivares and M. G. A. Paris, *De-Gaussification by inconclusive photon subtraction*, Laser Physics **16**, 1533-1550 (2006)
16. S. Olivares, M. G. A. Paris and U. L. Andersen, *Cloning of Gaussian states by linear optics*, Phys. Rev. A **73**, 062330 (8 pages) (2006)
15. V. D'Auria, A. Porzio, S. Solimeno, S. Olivares and M. G. A. Paris, *Characterization of bipartite states using a single homodyne detector*, J. Opt. B: Quantum and Semiclass. Opt. **7**, S750-S753 (2005)
14. S. Olivares and M. G. A. Paris, *Squeezed Fock state by inconclusive photon subtraction*, J. Opt. B: Quantum and Semiclass. Opt. **7**, S616-S621 (2005)
13. C. Invernizzi, S. Olivares, M. G. A. Paris and K. Banaszek, *Effect of noise and enhancement of nonlocality in on/off photodetection*, Phys. Rev. A **72**, 042105 (12 pages) (2005)
12. S. Olivares and M. G. A. Paris, *Photon subtracted states and enhancement of nonlocality in the presence of noise*, J. Opt. B: Quantum and Semiclass. Opt. **7**, S392-S397 (2005)
11. A. R. Rossi, S. Olivares and M. G. A. Paris, *Photon statistics without counting photons*, Phys. Rev. A **70**, 055801 (4 pages) (2004)
10. S. Olivares and M. G. A. Paris, *Enhancement of nonlocality in phase space*, Phys. Rev. A **70**, 032112 (6 pages) (2004)
9. A. R. Rossi, S. Olivares and M. G. A. Paris, *Degradation of continuous variable entanglement in a phase-sensitive environment*, J. Mod. Opt. **51**, 1057-1061 (2004)
8. S. Olivares and M. G. A. Paris, *Binary optical communication in single-mode and entangled quantum noisy channels*, J. Opt. B: Quantum and Semiclass. Opt. **6**, 69-80 (2004)
7. S. Olivares, M. G. A. Paris and A. R. Rossi, *Optimized teleportation in Gaussian noisy channels*, Phys. Lett. A **319**, 32-43 (2003)
6. S. Olivares, M. G. A. Paris and R. Bonifacio, *Teleportation improvement by inconclusive photon subtraction*, Phys. Rev. A **67**, 032314 (5 pages) (2003)
5. S. Olivares, *Superposition principle, spontaneous decoherence and C₆₀ molecule interference*, J. Opt. B: Quantum and Semiclass. Opt. **4**, 438-441 (2002)
4. R. Bonifacio and S. Olivares, *Puzzling aspects of Young interference and spontaneous intrinsic decoherence*, J. Opt. B: Quantum and Semiclass. Opt. **4**, S253-S259 (2002)
3. R. Bonifacio and S. Olivares, *Young's experiment, Schrödinger's spread and spontaneous intrinsic decoherence*, Z. Naturforsch. **56**, 41-47 (2001)
2. R. Bonifacio, S. Olivares, P. Tombesi and D. Vitali, *Model-independent approach to nondissipative decoherence*, Phys. Rev. A **61**, 053802 (8 pages) (2000)
1. R. Bonifacio, S. Olivares, P. Tombesi and D. Vitali, *Non-dissipative decoherence in Rabi oscillation experiments*, J. Mod. Opt. **47**, 2199-2211 (2000)

Proceedings

- [P1]. R. Bonifacio and S. Olivares, *Spontaneous intrinsic Decoherence in Rabi oscillations experiment* in "Quantum Communication, Computing, and Measurement" 3 (Kluwer Academic/Plenum Publishers, New York, 2001) Eds. P. Tombesi and O. Hirota, ISBN: 0-306-46609-0, pag. 69-77.
- [P2]. R. Bonifacio and S. Olivares, *Spontaneous intrinsic decoherence in two and three slits Young interference experiments*, in "Coherence and Quantum Optics VIII" (Kluwer Academic/Plenum Publishers, New York, 2003) Eds. N. P. Bigelow, J. H. Eberly, C. R. Stroud Jr. and I. A. Walmsley, ISBN: 978-0-306-48116-2, pag. 95-105.

- [P3]. A. Porzio, V. D'Auria, S. Fornaro, S. Solimeno, S. Olivares and M. G. A. Paris, *Efficient generation of CV entanglement by triply resonant non-degenerate OPA*, in "Proc. SPIE. 6583, Photon Counting Applications, Quantum Optics, and Quantum Cryptography", 65830R (10 pages) (May 10, 2007), doi: 10.1117/12.722940.
- [P4]. G. Brida, M. Genovese, M. Gramegna, S. Olivares, M. G. A. Paris and F. Piacentini, *On/off detection method for reconstructing the statistics of quantum optical states: an overview*, in "2009 Third International Conference on Quantum, Nano and Micro Technologies, 1-7 February 2009, Cancun, Mexico" (Cancun, Mexico, 2009) Eds. D. Avis, C. Kollmiyzer and V. Privman, ISBN: 978-0-7695-3524-1, pag. 54-58.
- [P5]. G. Brida, M. Genovese, M. Gramegna, P. Traina, L. Ciavarella, S. Olivares and M. G. A. Paris, *Interferometric Technique for Density Matrix Reconstruction by On/Off Detectors*, in "Quantum Communication and Quantum Networking - Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, Volume 36" (Springer-Verlag Berlin Heidelberg, 2010), ISBN: 978-3-642-11730-5, pag. 233-241.
- [P6]. S. Olivares, M. G. A. Paris, M. Delgado and M. Mondin, *Toward a "soft" output quantum channel via Bayesian estimation*, in "3rd International Symposium on Applied Sciences in Biomedical and Communication Technologies (ISABEL), 2010" (Rome, Italy, 2010), ISBN: 978-1-4244-8131-6, pag. 1-2.
- [P7]. S. Olivares, M. T. Delgado and M. G. A. Paris, *On the generation of entanglement from the interference of Gaussian states of light*, in "4th International Symposium on Applied Sciences in Biomedical and Communication Technologies (ISABEL), 2011" (Barcelona, Spain, 2011), ISBN: 978-1-4503-0913-4.
- [P8]. M. Bondani, A. Allevi, M. G. Genoni, F. A. Beduini, S. Olivares and A. Andreoni, *Reliable source of conditional states by multiple-photon subtraction using hybrid photodetectors*, in "Proc. SPIE 8375, Advanced Photon Counting Techniques VI" Eds. M. A. Itzler and J. C. Campbell 837505 (10 pages) (May 1, 2012), doi: 10.1117/12.919368.
- [P9]. A. Allevi, M. Bina, M. Bondani and S. Olivares, *Real-time phase-reference monitoring in a quasi-optimal coherent-state receiver*, in "Proc. SPIE 9505, Quantum Optics and Quantum Information Transfer and Processing 2015" Eds. K. Banaszek and C. Silberhorn 95050J (7 pages), (May 7, 2015), doi: 10.1117/12.2178937.
- [P10]. I. Ruo-Berchera, P. Degiovanni, S. Olivares, P. Traina, N. Samantaray and M. Genovese, *Improving interferometers by quantum light: toward testing quantum gravity on an optical bench*, in "Proc. SPIE 9980, Quantum Communications and Quantum Imaging XIV" Eds. R. E. Meyers, Y. Shih and K. S. Deacon 99800F (9 pages), (September 13, 2016), doi: 10.1117/12.2235413.
- [P11]. A. Allevi, M. Bina, S. Olivares and M. Bondani, *Hybrid homodyne-like detection scheme with photon-number-resolving detectors*, in "Progress In Electromagnetics Research Symposium - Spring (PIERS), 2017" 2874-2878, (St. Petersburg, Russia, 22-25 May 2017), doi: 10.1109/PIERS.2017.8262244.

Books

1. A. Ferraro, S. Olivares and M. G. A. Paris, *Gaussian States in Quantum Information*, (Bibliopolis, Napoli, 2005) ISBN: 88-7088-483-X.
2. L. Belloni e S. Olivares, *Fermi: L'energia atomica*, (Pelago, 2021) EAN: 9791280714756.
3. L. Belloni e S. Olivares, *Planck: La rivoluzione quantistica*, (Pelago, 2021) EAN: 9791280714770.
4. S. Olivares, *Appunti di Termodinamica*, (Milano University Press, 2023), in publication.

COORDINAMENTO O PARTECIPAZIONE A PROGETTI DI RICERCA

- **National Coordinator** of the research MIUR FIRB project "Light correlations for high-precision innovative sensing (LiCHIS)" (8 March 2012 - 7 March 2015). **Three involved Research Units, one theoretical** (University of Milan) and two **experimental** (University of Insubria, Como, and INRiM, Turin).
- **Principal investigator**: Grant from the University of Milan for the project "Self-organizing Photonic Quantum Links" through the "Piano di Sostegno alla Ricerca - Seal of Excellence" (Linea 3)" (2021, 18 months). Two local Research Units at the University of Milan.
- **Member**: Grant from MAECI (Italian Ministry of Foreign Affairs and International Cooperation) for the project "ENabling quantum crYptoGraphy over standard optical communication systems (ENYGMA)" grant nr. PGR06314 (2019 - 2021). Involved Research Units: CNIT (Consorzio Nazionale Interuniversitario per le Telecomunicazioni), SSSA (Scuola Superiore Sant'Anna, Pisa), UNIMI and CSULA (California State University, Los Angeles).
- **Principal investigator**: Grant from the Department of Physics of the University of Milan for the project "Continuous-variable quantum optical simulator with integrated quantum photonics" through the "Progetti Giovani" (Linea 2-A)" supported by UNIMI (2017).
- **Principal investigator**: Grant from the Department of Physics of the University of Milan for the project "Continuous-variable quantum technology with integrated quantum photonics" through the "Piano di Sostegno alla Ricerca" supported by UNIMI (2016).

- **Principal investigator:** Grant from the Department of Physics of the University of Milan for the project “Programmable optical devices for quantum transport” through the “Piano di Sostegno alla Ricerca” supported by UNIMI (2015).
- **Principal investigator:** Grant from the Department of Physics of the University of Milan for the project “Generation, characterization and application of non-classical continuous-variable states for quantum information protocols” through the “Sviluppo UNIMI” supported by UNIMI (2014).
- **Principal investigator:** Grant from the University of Trieste for the project “Characterization and dynamics of correlations in optical systems for quantum technologies” (2009).
- **Member** of the ongoing INFN projects TIME2QUEST and MOONLIGHT.

ATTIVITÀ QUALI LA DIREZIONE O LA PARTECIPAZIONE A COMITATI EDITORIALI DI RIVISTE SCIENTIFICHE

- **Editorial Board Member** of The European Physical Journal D (EPJ D) (2022 - today).
- **Editorial Board Member** of Scientific Report (2016 - 2023).
- **Guest Editor** of the International Journal of Quantum Information (Volume 12, Number 2, March 2014).
- **Guest Editor** of the Special Issue “*Basics and Applications in Quantum Optics*” of the journal Applied Sciences (Volume 11, 2022).
- **Guest Editor** of the Special Issue “*Quantum Communication*” of the journal Entropy (2022).
- **Guest Editor** of the Special Issue “*Quantum optical science & technology*” of the journal Physics Letters A (2022).
- **Guest Editor** of the Special Issue “*Foundations and applications of Quantum Optics*” of the journal Physics Letters A (2023).
- **Scientific advisor** for the book series “Le frontiere della scienza”, National Geographic, RBA (2017 - 2019).

PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA

“Le Scienze” award for quantum optics and the medal awarded by the President of the Italian Republic, Carlo Azeglio Ciampi (2005).

PARTECIPAZIONE IN QUALITÀ DI RELATORE A CONGRESSI E CONVEGNI DI INTERESSE INTERNAZIONALE

43 oral contributions to scientific conferences (31 as invited talks and 1 keynote).

- 11 - 12 June 2023 — Oral: “IWW - International Wigner Workshop 2023”, Barcelona (Spain). *Mitigating phase diffusion through a realistic optical parametric oscillator.*
- 24 - 25 May 2022 — **Keynote:** “Underwater Quantum Science & Technology Workshop”, La Spezia (Italy). *Hybrid quantum key distribution using coherent states and photon-number-resolving detectors.*
- 9 September 2021 — **Invited:** “New Frontiers and Applications for Quantum Technologies, Rome (Italy).” *Rainbows from crystals: correlated photons for advanced applications in quantum technologies.*
- 4 - 6 November 2019 — **Invited:** “3ème Congrès International de Physique et Chimie Quantique CIPQC 2019”, Bejaia (Algeria). *Squeezing (and) phase diffusion: recent theoretical and experimental results.*
- 17 - 21 June 2019 — **Invited:** “16th International Conference on Squeezed States and Uncertainty Relations”, Madrid (Spain). *Squeezing phase diffusion.*
- 27 - 31 May 2019 — **Invited:** “Quantum 2019 - Workshop ad memoriam of Carlo Novero”, Turin (Italy). *Phase-shift-keyed binary communication in noisy channels: when squeezing can help.*
- 10 - 11 October 2018 — **Invited:** “Deuxièmes Doctoriales de Physique”, Bejaia (Algeria). *Squeezed light for interferometry and quantum metrology.*
- 19 - 21 September 2018 — **Invited:** “Quantum Limits of Optical Communication II”, Warsaw (Poland). *Squeezing as a resource for phase-shift-keyed binary communication in noisy channels.*
- 16 - 20 July 2018 — **Invited:** “27th International Laser Physics Workshop”, Nottingham (UK). *Squeezing as a resource for phase-shift-keyed binary communication in noisy channels.*
- 9 - 13 July 2018 — **Invited:** “ITN ColOpt Network Event”, Milan (Italy). *Squeezed light: from interferometers to quantum metrology.*

- 12 - 15 September 2017 — **Invited:** “10th Italian Quantum Information Science Conference - IQIS 2017”, Florence (Italy). *Homodyne-like detection via photon-number-resolving detectors for coherent states discrimination.*
- 05 June 2017 — **Invited:** “IW2 - 2nd International Wigner Workshop 2017”, Windermere (UK). *Full reconstruction of symmetric two-mode optical quantum states with Gaussian Wigner function via spectral homodyne detection.*
- 08 - 13 May 2017 — **Invited:** “Quantum 2017 - Workshop ad memoriam of Carlo Novero”, Turin (Italy). *Homodyne-like detection via photon number-resolving detectors: from coherent states discrimination to quantum cryptographic applications.*
- 11 - 15 July 2016 — **Invited:** “25th International Laser Physics Workshop”, Yerevan (Armenia). *Bounds to precision for quantum interferometry with Gaussian states and operations: recent results.*
- 27 - 29 June 2016 — **Invited:** “AQM 2016 Workshop”, Sant’Erasmus, Venice (Italy). *Here and there at AQM with a (quantum) compass.*
- 08 - 10 March 2016 — **Oral:** “1st QuProCS meeting”, Milan (Italy). *Full quantum state reconstruction of symmetric two-mode squeezed thermal states: recent advances @ UNIMI.*
- 10 - 12 September 2015 — **Invited:** “8th Italian Quantum Information Science Conference - IQIS 2015”, Monopoli (Italy). *Bounds to precision for quantum interferometry with Gaussian states and operations.*
- 23 - 25 June 2015 — **Invited:** “AQM 2015 Workshop”, Modena (Italy). *Squeezed light and interferometry: is that all, Folks?*
- 14 - 18 July 2014 — **Invited:** “23rd International Laser Physics Workshop”, Sofia (Bulgaria). *Real-time phase-reference monitoring of quasi-optimal coherent-state receiver.*
- 25 - 31 May 2014 — **Invited:** “Quantum 2014: VII workshop ad memoriam of Carlo Novero”, Turin (Italy). *Fidelity to assess quantum resources: the good, the bad and the balloons.*
- 27 September 2013 — **Invited:** “Officina di didattica e divulgazione della Fisica - Aspetti Quantistici”, Como (Italy). *Fotoni ed atomi: un breve viaggio nel mondo quantistico.*
- 09 - 13 September 2013 — **Oral:** “Italian National Conference on Condensed Matter Physics - FisMat13”, Milan (Italy). *Correlations, entanglement or nothing: recent results on bilinear interactions of light modes.*
- 15 - 19 July 2013 — **Invited:** “22nd International Laser Physics Workshop”, Prague (Czech Republic). *Homodyne receiver for optimal phase estimation and communication in the presence of phase diffusion: theory and experiment.*
- 26 - 28 September 2012 — **Invited:** “5th Italian Quantum Information Science Conference - IQIS 2012”, Padua (Italy). *On the generation of correlations through a beam splitter: entanglement and invariance.*
- 23 - 27 July 2012 — **Invited:** “21st International Laser Physics Workshop”, Calgary (Canada). *Correlations and invariance through a beam splitter: the optical “illusionist game”.*
- 2 - 6 July 2012 — **Invited:** “19th Central European Workshop on Quantum Optics”, Sinaia (Romania). *Optical interferometry in the presence of large phase diffusion.*
- 20 - 22 June 2012 — **Invited:** “Open Problems in Quantum Mechanics Workshop”, Frascati (Italy). *Optical interferometry in the presence of large phase diffusion.*
- 31 May - 3 June 2012 — **Oral:** “1st Twin Quantum Workshop”, Favignana (Italy). *Invariance through a beam splitter (as explained to my children).*
- 21 - 26 May 2012 — **Invited:** “Quantum 2012: VI workshop ad memoriam of Carlo Novero”, Turin (Italy). *Through the beam splitter and what we can find there: correlations, entanglement or nothing?*
- 15 - 17 May 2012 — **Invited:** “FOTONICA 2012 - Parallel Event: SIOF Session”, Firenze (Italy). *LiCHIS project: light correlations at work.*
- 26 - 29 October 2011 — **Invited:** “ISABEL 2011: 4th International Symposium on Applied Sciences in Biomedical and Communication Technologies”, Barcelona (Spain). *On the generation of entanglement from the interference of Gaussian states of light.*
- 7 - 10 November 2010 — **Invited:** “ISABEL 2010: 3rd International Symposium on Applied Sciences in Biomedical and Communication Technologies”, Rome (Italy). *Toward a “soft” output quantum channel via Bayesian estimation.*
- 23 - 29 May 2010 — **Invited:** “Quantum 2010: V workshop ad memoriam of Carlo Novero and Italian Quantum Information Science Conference 2010”, Turin (Italy). *Qubit phase estimation in the presence of noise: the Bayesian approach.*
- 5 - 8 November 2009 — **Oral:** “Italian Quantum Information Science Conference 2009”, Pisa (Italy). *Bayesian qubit phase estimation in the presence of phase diffusion: theory and experiment.*
- 22 - 26 June 2009 — **Oral:** “11th International Conference on Squeezed States and Uncertainty Relations and 4th Feynman Festival”, Olomouc (Czech Republic). *Bayesian Noisy Phase Estimation in Qubit Systems: from Theory to Experiment.*

- 23 - 27 May 2009 — Oral: “16th Central European Workshop on Quantum Optics”, Turku (Finland). *Characterization of bipartite Gaussian states: from theory to experiment.*
- 19 - 23 May 2008 — Invited: “Quantum 2008: IV workshop ad memoriam of Carlo Novero”, Turin (Italy). Single- and multi-parameter quantum estimation.
- 27 March 2008 — Invited: “Quantum Computing Workshop”, Milan (Italy). *Two approaches to quantum estimation.*
- 1 - 5 June 2007 — Oral: “14th Central European Workshop on Quantum Optics”, Palermo (Italy). *Interspecies teleportation and telecloning between light and cold atoms.*
- 27 September - 1 October 2006 — Oral: “Focus meeting: quantum process estimation”, Budmerice (Slovakia). *Cloning of Gaussian States by Linear Optics.*
- 26 - 31 May 2006 — Invited: “XI International Conference on Quantum Optics”, Minsk (Belarus). *Optimized Interferometry with Gaussian States.*
- 23 - 27 May 2006 — Oral: “13th Central European Workshop on Quantum Optics”, Vienna (Austria). *Cloning of Gaussian States by Linear Optics.*
- 2 - 6 May 2005 — Oral: “9th International Conference on Squeezed States and Uncertainty Relations”, Besançon (France). *Nonlocality of continuous variable systems in the presence of noise.*
- 18 - 20 July 2004 — Oral: “11th Central European Workshop on Quantum Optics”, Trieste (Italy). *Binary Optical Communication in Single-Mode and Entangled Quantum Noisy Channels.*

ATTIVITÀ GESTIONALI, ORGANIZZATIVE E DI SERVIZIO

INCARICHI DI GESTIONE E AD IMPEGNI ASSUNTI IN ORGANI COLLEGIALI E COMMISSIONI, PRESSO RILEVANTI ENTI PUBBLICI E PRIVATI E ORGANIZZAZIONI SCIENTIFICHE E CULTURALI, OVVERO PRESSO L'ATENEO O ALTRI ATENEI

- Degree Course Coordinator of the Bachelor's degree in Physics, University of Milan (Italy) (2021 - today).
- President of the Outreach Commission of the Department of Physics, UNIMI (2018 - 2021).
- Vice-President of the Outreach Commission of the Department of Physics, UNIMI (2014 - 2018).

PRESIDENZA E PARTECIPAZIONE A COMITATI DI PROGRAMMI DI CONGRESSI INTERNAZIONALI

- General Chair of the “International Wigner Workshop (IWW) 2023”, 11 - 12 June 2023, Barcelona, Spain.
- Member of the Technical Program Committee (TPC) of the “Signal Processing in Photonic Communications - SPPCom2023” (10 - 13 July 2023, Busan, South Korea).
- Member of the Scientific Committee and Organizer of 5 conferences:
 - “27th Central European Workshop on Quantum Optics (CEWQO2023)”, 3 - 7 July 2023, Milan (Italy)
 - “3ème Congrès International de Physique et Chimie Quantique - CIPCQ 2019”, 4 - 6 November 2019, Bejaia (Algeria).
 - “12th Italian Quantum Information Science Conference - IQIS 2019”, 9 - 12 September 2019, Milan (Italy).
 - “6th Italian Quantum Information Science Conference - IQIS 2013”, 24 - 26 September 2013, Como (Italy).
- Member of the Program Committee of the “International Wigner Workshop 2019” (19 - 20 May 2019, Evanston, Illinois, USA).
- Scientific secretary of 3 international conferences:
 - “Mysteries, Puzzles and Paradoxes in Quantum Mechanics”, 1 - 5 September 2003, Gargnano (Garda Lake, Italy).
 - “Recoil Induced Effects in BEC”, 23 - 26 June 2002, Gargnano (Garda Lake, Italy).
 - “Mysteries, Puzzles and Paradoxes in Quantum Mechanics”, 27 August - 1 September 2001, Gargnano (Garda Lake, Italy).

CONSULENZA E VALUTAZIONE DI PROGETTI PER RILEVANTI ENTI PUBBLICI E PRIVATI E ORGANIZZAZIONI SCIENTIFICHE E CULTURALI NAZIONALI E INTERNAZIONALI (ADVISING)

- **Reviewer** of a scientific project for the Czech Science Foundation (2018).
- **Evaluator** of a scientific project for the Individual Fellowship at the Université libre de Bruxelles, IF@ULB (2020).
- **Reviewer** of a scientific project for the German Research Foundation (2020).
- **Reviewer** of a scientific project for the Czech Science Foundation (2021).
- **Referee in the VQR 2015-2019** for the Italian National Agency for the Evaluation of Universities and Research Institutes (ANVUR) (2021).
- **Reviewer** of a grant proposal for the National Science Centre, Poland (2021).

Data

25/07/2023

Luogo

Milano