ALESSIA ALLEVI
CURRICULUM VITAE

EDUCATION (reverse chronological order)

- January 23, 2006: Ph.D. in Physics at the University of Insubria (Como) under the supervision of Prof. Andreoni
- July 10, 2002: Master in Physics obtained with full marks (110 on 110) cum laude at the University of Insubria
- 1992-1997: High School, Liceo Classico (Liceo Ginnasio “A. Volta”, Como). Final score: 60 on 60 (full marks)

EMPLOYMENT (reverse chronological order)

- December 2019 – today: Associate Professor of Physics at the University of Insubria
- March 2012 – November 2019: fixed-term contract as a Researcher at the University of Insubria
- January 2011 – December 2011: 1-year grant: "Experiments of Quantum Optics and Molecular Spectroscopy for STELLA (The School in Experiments with Lasers and Theory on Gravitational Physics)” at the University of Insubria
- January 2010 – December 2010: 1-year contract as a Researcher, CNISM (Consorzio Nazionale Interuniversitario per le Scienze fisiche della Materia), Como Unit
- September 2006 to April 2007 and August 2007 to September 2009: 3 Postdoctoral fellowships awarded by CNISM
- December 2005 to August 2006 and May 2007 to July 2007: 1-year grant: "Nonclassical optical states for the investigation of coherent and in-coherent light-matter interactions" at the University of Insubria.

INSTITUTIONAL RESPONSIBILITIES:

- 2025 – today: Representative for the Department in the Equal Opportunities and Gender Committee of the University of Insubria
- 2024 – today: Member of the Committee board of the Como Lake Institute of Photonics (CLIP)
- 2020 – today: Member and Coordinator (since 2023) of the Steering Committee for Bachelor's and Master's Degree Courses in Physics
- 2022 - today: Responsible for Insubria Unit within the Italian Quantum Weeks
- 2023 – today: Member of the Joint Teaching Board for the Double Degree Program between Linnaeus University and University of Insubria
- 2023 – today: **Coordinator of Bachelor's and Master's Degree Courses in Physics and AiQUA**
- 2024 – today: **Director of the Postgraduate Course in Quantum Technologies**
- 2024 – today: Member of the Consultive Committee and AiQUA Committee of the PhD School in Physics and Astrophysics
- Member of the FAR Committee, Section 2 at the University of Insubria (2021 - 2022)
- Laser safety officer of the University of Insubria (July 1, 2018 - today)
- Member of the AIQUA Committee of Physics at the University of Insubria (2019 - 2023)
- Member (since 2013) and secretary (since 2019) of the PhD School in Physics and Astrophysics
- Representative of Physicists in the Placement Committee of the University of Insubria (2019 - 2024)
- Fire emergency officer at the University of Insubria (May 2, 2016 - today)
- Responsible of the funds for teaching laboratories of Physics at the University of Insubria (2016 - today)
- Representative of Physicists in the Orientation Committee of the University of Insubria (2016 - 2023).

PROFESSIONAL QUALIFICATIONS

- In 2023 she won the national qualification as a Full Professor in the sector 02/B1
- In 2011 she won a qualification as a Researcher at CNR (Consiglio Nazionale delle Ricerche)
- In 2013 she won the national qualification as an Associate Professor in the sector 02/B1.

RESEARCH ACTIVITY

Her research activity includes some important topics of light-matter interaction, such as nonlinear optics, quantum optics, quantum information science, and characterization of different classes of photodetectors. The activity is essentially experimental, but it is well supported by several collaborations with national and international theoretical groups.

The reasearch has been performed on the following topics:

- study of the holographic properties of the second-order nonlinear interactions for the production of real-time holograms in one and two dimensions
- generation and characterization in the classical regime of two interlinked second-order nonlinear interactions. Application to the development of logic gates
- study, production and characterization of intense bipartite and tripartite entangled states in the pulsed domain and in different intensity regimes: in the macroscopic one with pin photodiodes, either amplified or not, in the mesocopic one with hybrid photodetectors with partial photon-counting capability, in the microscopic one with single-photon detectors
- reconstruction of the photon-number statistics, the shot-by-shot photon-number correlation and the Wigner function of classical states in the mesoscopic regime by means of different methods of analysis (self-consistent and ON/OFF procedures)
- use and characterization of different classes of photodetectors (photomultipliers, hybrid photodetectors, Si-photomultipliers, EMCCD cameras, iCCD cameras) to measure pulsed states of light
- realization of imaging protocols (image transfer, ghost imaging) with CCD and EMCCD cameras
- generation of conditional states by means of multiple photon-subtraction with photon-number resolving detectors on classically and quantum correlated bipartite states
- generation and characterization of non-Gaussian states; comparison between different non-Gaussianity measures for quantum information protocols
- investigation of sub-Poissonian and non-Gaussian character of conditional states obtained by multimode twin-beam states in the mesoscopic photon-number domain
- study of high-order photon-number correlations and applications to the discrimination between classical and quantum states of light
- generation and characterization of phase-averaged coherent states to be used as decoy states in quantum key distribution protocols
- phase estimation in communication protocols with coherent states in the presence of uniform phase noise
- implementation of homodyne-like detection schemes employing photon-number-resolving detectors for coherent-state discrimination
- investigation of the spatio-spectral coherence properties of twin-beam states of light at different intensity regimes, including pump depletion
- application to imaging of the spectral correlations of twin-beam states
- study of the statistical properties and of the quantum nature of light generated by means of second-harmonic generation and up-conversion process applied to a multimode twin-beam state.
- exploitation of the intensity correlations exhibited by super-thermal light for imaging applications
- Implementation of a homodyne-like detection scheme based on photon-number-resolving detectors for coherent-state discrimination
- Implementation of homodyne-like detection schemes based on photon-number-resolving detectors for quantum-state reconstruction and continuous-variable quantum key distribution
- Investigation on the robustness of nonclassical correlations of mesoscopic twin-beam states in the presence of asymmetric losses, also modelled according to specific statistical distributions, and noise sources
- Implementation of ghost-imaging and ghost-diffraction protocols through mesoscopic pseudo-thermal light and its connection to Popper's thought experiment
- Implementation of novel quantum communication protocols in the mesoscopic intensity domain based on photon-number-resolving detectors and twin-beam states.

Her first publication dates back to 2003. Till now she has 102 publications on peer-reviewed international journals, several conference proceedings, and 3 chapters in books. In 2025 she also published a popular science book. She presented her research in several conferences and workshops, and also in some invited seminars. She received about 1720 citations and her H-index is 25 (Scopus, January 2026).

She is Referee of several peer-reviewed international journals, such as such as New Journal of Physics, Optica, Optica Quantum, Optics Letters, Optics Express, Journal of the Optical Society of America B, Optical Materials Express, Applied Optics, Continuum, Applied Sciences, Entropy, Physics Letters A, Scientific Reports, and EPJ+, EPJD, Laser & Photonics Reviews, International Journal of Quantum Information.

In 2014 she was co-Editor of the Feature Issue "Photon-Number-Resolving Detectors for Quantum State Engineering" published in J. Opt. Soc. Am. B.
Since 2017 she is Associate Editor of the journal Quantum Measurements and Quantum Metrology (De Gruyter Group).
In 2020 – 2021 she was co-editor of the Feature Issue "Basics and Applications in Quantum Optics" published in Applied Sciences, and also as a book.
Since 2022 she is Associate Editor of the journal Photonics (MDPI Group).

LIST OF PUBLICATIONS

Publications on Peer-reviewed International Journals

2026

[1] A. Pozzoli, M. Lamperti, M. Clerici, M. Bondani, and A. Allevi, "Measuring nonclassical correlation of sub-picosecond pulsed mesoscopic twin-beam states", Int. J. Quantum Inform., 2540012 (2026).

2025

[2] A. Mazzocchi, M. N. Notarnicola, S. Cassina, M. Lamperti, S. Olivares, and A. Allevi, "Implementation of a hybrid SiPM receiver for applications to continuous-variable quantum key distribution with binary modulation", Int. J. Quantum Inform., 2540011 (2025).

[3] S. Cassina, A. Pozzoli, and A. Allevi, "Statistical characterization of discrete amplitude-modulated coherent states at telecom wavelengths by means of an up-conversion-based photon-number-resolving detector", *Opt. Express* **23,** 51351-51361 (2025).

[4] S. Cassina, A. Pozzoli, G. Vesco, M. Lamperti, M. Marangoni, and A. Allevi, "Sum-frequency-based photon-number-resolving detector for telecom wavelengths", *APL Photonics* **10**, 126104 (2025).

[5] L. Razzoli, A. Pozzoli, and A. Allevi, "Hybrid discrimination strategy in quantum communication based on photon-number-resolving detectors and mesoscopic twin-beam states", *Quantum Sci. Technol.* **10**, 045036 (2025).

[6] A. Pozzoli, M. Lamperti, M. Clerici, M. Bondani, and A. Allevi, "Optimal generation of mesoscopic twin-beam states by means of a natively femtosecond laser system", *APL Photonics* **10**, 036116 (2025).

[7] S. Cassina, M. N. Notarnicola, S. Olivares, and A. Allevi, "On the application of a Silicon photomultiplier-based receiver for binary phase-shift-keying protocols", *Phys. Lett. A* **541**, 130403 (2025).

2024

[8] A. Sanvito, S. Cassina, M. Lamperti, M. N. Notarnicola, S. Olivares, and A. Allevi, "Assessing a binary quantum channel exploiting a silicon photomultiplier based hybrid receiver", *Opt. Express* **32**, 39846-39859 (2024).

[9] S. Cassina, G. Cenedese, A. Allevi, and M. Bondani, "Speckled-speckle field as a

resource for imaging techniques", *Sci. Rep.* **14**, 15161 (2024).

[10] S. Cassina, G. Cenedese, M. Lamperti, M. Bondani, and A. Allevi, "On the use of superthermal light for imaging applications", *Phys. Lett. A* **495**, 129300 (2024).

[11] S. Cassina, G. Cenedese, M. Bondani, and A. Allevi, "Application of superthermal light to imaging and quantum communication protocols", *Int. J. Quantum Inform.* 2450025 (2024).

2023

[12] A. Allevi and M. Bondani, "Thermal and superthermal noise signals as resources for underwater quantum communication", *Phys. Lett. A* **492**, 129207 (2023).

[13] A. Allevi and M. Bondani, "Feasibility of a novel Quantum Communication protocol in Jerlov type I water", *Entropy* **25**, 16 (2023).

[14] C. Bianciardi, A. Allevi, and M. Bondani, "Experimental validation of the statistical properties of speckled-Speckle fields in the mesoscopic intensity regime", *Appl. Sci.* **13**, 4490 (2023).

[15] A. Allevi, F. Molteni, S. Zambelli, and M. Bondani, "Optimizing the propagation of mesoscopic twin-beam states for novel quantum communication protocols", *Int. J. Quantum Inform.* **21**, 2340004 (2023)

2022

[16] A. Allevi and M. Bondani, "Towards underwater quantum communication in the mesoscopic intensity regime," *Opt. Express* **30**, 44175-44185 (2022).

[17] A. Allevi, "Mesoscopic States of Light for the Detection of Weakly Absorbing Objects," *Photonics* **9**, 819 (2022).

[18] A. Allevi, "Endurance of mesoscopic twin-beam states propagating in noisy channels," *Il Nuovo Cimento*, **45 C**, 158 (2022) Invited paper.

[19] A. Allevi and M. Bondani, "Novel scheme for secure data transmission based on mesoscopic twin beams and photon-number-resolving detectors," *Sci. Rep.* **12**, 15621 (2022).

[20] A. Allevi and M. Bondani, "Multi-mode twin-beam states in the mesoscopic intensity domain," *Phys. Lett. A* **423**, 127828 (2022).

2021

[21] S. Cassina, A. Allevi, V. Mascagna, M. Prest, E. Vallazza, and M. Bondani, "Exploiting the wide dynamic range of silicon photomultipliers for quantum optics applications**,"** *EPJ Quantum Technology* **8**, 4 (2021).

[22] A. Allevi, S. Olivares, and M. Bondani, "Special issue on basics and applications in quantum optics," *Appl. Sci.* **11**, 10028 (2021).

[23] A. Allevi and M. Bondani, "Effect of noisy channels on the transmission of mesoscopic twin-beam states," *Opt. Express* **29**, 32842-32852 (2021).

[24] G. Chesi, A. Allevi, and M. Bondani, "Conditional measurements with silicon photomultipliers," *Appl. Sci.* **11**, 4579 (2021).

2020

[25] A. Allevi and M. Bondani, "Tailoring asymmetric lossy channels to test the robustness of mesoscopic quantum states of light," *Appl. Sci.* **10**, 9094(1-12) (2020).

[26] B. Giacomelli, A. Allevi, and M. Bondani, "Implementation of Popper's thought experiment with pseudo-thermal light," *Phys. Lett. A* **384**, 126482 (2020).

[27] R. Machulka, J. Perina Jr., O. Haderka, A. Allevi, and M. Bondani, "Waves in intensity coherence of evolving intense twin beams," *Phys. Rev. A* **101**, 063841 (2020).

[28] 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 (2020).

[29] G. Chesi, A. Allevi, and M. Bondani, “Effects of non-ideal features of Silicon photomultiplier on the measurement of quantum correlations,” *Int. J. Quantum Inf.* **17**, 1941012(1-14) (2020).

2019

[30] G. Chesi, L. Malinverno, A. Allevi, R. Santoro, M. Caccia, and M. Bondani, “Measuring nonclassicality of mesoscopic twin-beam states with silicon photomultipliers,” *Proceedings* **12**, 48(1-4) (2019).

[31] A. Allevi and M. Bondani, “Preserving nonclassicality in noisy communication channels,” *Proceedings* **12**, 3(1-4) (2019).

[32] A. Allevi and M. Bondani, “Preserving nonclassical correlations in strongly unbalanced conditions,” *J. Opt. Soc. Am. B* **36**, 3275-3281 (2019). *Editors’ Pick.*

[33] 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 (2019).

[34] G. Chesi, A. Allevi, and M. Bondani, “Autocorrelation functions: a useful tool for both state and detector characterisation,” *Quantum Meas. Quantum Metrol.* **6**, 1-6 (2019).

[35] G. Chesi, L. Malinverno, A. Allevi, R. Santoro, M. Caccia, A. Martemiyanov, and M. Bondani, “Optimizing Silicon photomultipliers for Quantum Optics,” *Sci. Rep.* **9**, 7433(1-12) (2019).

[36] G. Chesi, M. M. Wauters, N. Fasola, A. Allevi, and M. Bondani, “Second harmonic revisited: An analytic quantum approach,” *Appl. Sci.* **9**, 1690(1-14) (2019).

[37] G. Chesi, L. Malinverno, A. Allevi, R. Santoro, M. Caccia, and M. Bondani, “Measuring nonclassicality with silicon photomultipliers,” *Opt. Lett.* **44**, 1371-1374 (2019).

[38] A. Allevi and M. Bondani, “Can nonclassical correlations survive in the presence of asymmetric lossy channels?,” *Eur. Phys. J. D* **72**, 178(1-6) (2018).

2018

[39] A. Allevi, M. Bina, S. Olivares, and M. Bondani, “Homodyne-like detection scheme based on photon-number-resolving detectors,” *Int. J. Quantum Inf.* **15**, 1740016(1-11) (2017).

2017

[40] A. Allevi, G. Chesi, and M. Bondani, “Generation of quasi-single-mode twin-beam states in the high-intensity domain,” *Int. J. Quantum Inf*. **15**, 1740021(1-10) (2017).

[41] A. Allevi, S. Cassina, and M. Bondani, “Super-thermal light for imaging applications,”
Quantum Meas. Quantum Metrol. **4**, 26-34 (2017).

[42] A. Allevi and M. Bondani, “Antibunching-like behavior of mesoscopic light,” *Sci. Rep.* **7**, 16787(1-10) (2017).

[43] 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).

[44] A. Allevi and M. Bondani, “Rainbow correlation imaging with macroscopic twin

beam," *J. Opt.* **19**, 064001(1-7) (2017).

2016

[45] I. I. Arkhipov, J. Peřina Jr., O. Haderka, A. Allevi, and M. Bondani, "Entanglement and nonclassicality in four-mode Gaussian states generated via parametric down-conversion and frequency up- conversion," *Sci. Rep.* **6,** 33802(1-12) (2016).

[46] 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(1-9) (2016).

[47] J. Peřina Jr., O. Haderka, A. Allevi, and M. Bondani, "Internal dynamics of intense twin beams and their coherence," *Sci. Rep.* **6**, 22320(1-8) (2016).

2015

[48] O. Haderka, R. Machulka, J. Peřina Jr., A. Allevi, and M. Bondani, "Spatial and spectral coherence in propagating high-intensity twin beams," *Sci. Rep.* **5**, 14365(1-8) (2015).

[49] A. Allevi and M. Bondani, "Direct detection of super-thermal photon-number statistics in second-harmonic generation," *Opt. Lett.* **40**, 3089-3092 (2015).

2014

[50] M. Lamperti, A. Allevi, M. Bondani, R. Machulka, V. Michálek, O. Haderka, and Jan Peřina Jr., "Optimal sub-Poissonian light generation from twin beams by photon-number resolving detectors," *J. Opt. Soc. Am. B* **31,** 20-25 (2014).

[51] J. Peřina Jr., O. Haderka, A. Allevi, and M. Bondani, "Absolute calibration of photon-number-resolving detectors with an analog output using twin beams," *Appl. Phys. Lett.* **104**, 041113(1-4) (2014).

[52] 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).

[53] A. Allevi, S. Olivares, and M. Bondani, "Bracket states for communication protocols with coherent states," *Int. J. Quant. Inf.* **12**, 1461018(1-9) (2014).

[54] M. Lamperti, A. Allevi, M. Bondani, R. Machulka, V. Michálek, O. Haderka, and J. Peřina Jr., "Generation of sub-Poissonian non-Gaussian states from multimode twin beams by photon-number-resolving detectors," *Int. J. Quant. Inf.* **12**, 1461017(1-7) (2014).

[55] R. Machulka, O. Haderka, J. Peřina Jr., M. Lamperti, A. Allevi, and M. Bondani, "Spatial properties of twin-beam correlations at low- to high-intensity transition," *Opt. Express* **22**, 13374-13379 (2014).

[56] A. Allevi, O. Jedrkiewicz, E. Brambilla, A. Gatti, J. Peřina Jr., O. Haderka, and M. Bondani, "Coherence properties of high-gain twin beams," *Phys. Rev. A* **90**, 063812(1-7) (2014).

[57] A. Allevi, M. Bondani, and O. Haderka, "Photon-number-resolving detectors for quantum-state engineering: Introduction to the feature issue,", *J. Opt. Soc. Am. B* **31,** PNR1-PNR2 (2014).

[58] A. Allevi and M. Bondani, "Statistics of twin-beam states by photon-number resolving detectors up to pump depletion," *J. Opt. Soc. Am. B* **31,** B14-B19 (2014).

[59] R. Machulka, K. Lemr, O. Haderka, M. Lamperti, A. Allevi and M. Bondani, "Luminescence-induced noise in single photon sources based on BBO crystals," *J. Phys. B: At. Mol. Opt. Phys*. **47,** 215501(1-7) (2014).

[60] A. Allevi, M. Lamperti, O. Jedrkiewicz, J. Galinis, R. Machulka, O. Haderka, J. Peřina Jr. and M. Bondani, "Spatio-spectral characterization of twin-beam states of light for quantum state engineering," *Int. J. Quant. Inf.* **12**, 1560027(1-10) (2014).

2013

[61] 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).

[62] A. Allevi, M. Lamperti, M. Bondani, Jan Peřina Jr., V. Michálek, O. Haderka, and R. Machulka, "Characterizing the non-classicality of mesoscopic optical twin-beam states," *Phys. Rev. A* **88**, 063807(1-9) (2013).

2012

[63] M. Bondani, A. Allevi, and A. Andreoni, "Ghost imaging by intense multimode twin beam," *Eur. Phys. J. Special Topics* **203**, 151-161 (2012).

[64] 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(1-7) (2012).

[65] A. Allevi, S. Olivares, and M. Bondani, "Manipulating the non-Gaussianity of phase-randomized coherent states," *Opt. Express* **20**, 24850-24855 (2012).

[66] A. Allevi, S. Olivares, and M. Bondani, "Experimental quantification of non-Gaussianity of phase-randomized coherent states," *Int. J. Quant. Inf.* **10**, 1241006(1-9) (2012).

[67] 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(1-8) (2012).

2011

[68] A. Allevi, M. Bondani, and A. Andreoni, "Wigner function of pulsed fields reconstructed by direct detection," *Int. J. Quant. Inf.* **9**, 39-47 (2011).

[69] A. Allevi, F. A. Beduini, M. Bondani, and A. Andreoni, "Photon-number correlation of a classical exotic state in the mesoscopic regime," *Int. J. Quant. Inf.* **9**, 103-110 (2011).

[70] M. Bondani, A. Allevi, and A. Andreoni, "Choosing a photoemissive detector suitable for photon-number statistics of pulsed fields," *Int. J. Quant. Inf.* **9**, 93-101 (2011).

[71] F. Sciarrino, G. Vallone, G. Milani, A. Avella, J. Galinis, R. Machulka, A. M. Perego, K. Y. Spasibko, A. Allevi, M. Bondani, and P. Mataloni, "High degree of entanglement and nonlocality of a two-photon state generated at 532 nm," *Eur. Phys. J. Special Topics* **199**, 111-125 (2011).

[72] T. Iskhakov, A. Allevi, D. A. Kalashnikov, V. G. Sala, M. Takeuchi, M. Bondani, and M. Chekhova, "Intensity correlations of thermal light: Noise reduction measurements and new ghost imaging protocols," *Eur. Phys. J. Special Topics* **199**, 127-138 (2011).

2010

[73] M. Bondani, A. Allevi, and A. Andreoni, "Self-consistent phase determination for Wigner function reconstruction," *J. Opt. Soc. Am. B* **27**, 333-337 (2010).

[74] 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(1-5) (2010).

[75] M. Ramilli, A. Allevi, V. Chmill, M. Bondani, M. Caccia, and A. Andreoni, "Photon-number statistics with Silicon photomultipliers," *J. Opt. Soc. Am. B* **27**, 852-862 (2010).

[76] A. Allevi, M. Bondani, and A. Andreoni, "Photon-number correlations by photon-

number resolving detectors," *Opt. Lett.* **35**, 1707-1709 (2010).

[77] 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(1-8) (2010).

[78] A. Allevi, A. Andreoni, F. A. Beduini, M. Bondani, M. G. Genoni, S. Olivares, and M. G. A. Paris, "Conditional measurements on multimode pairwise entangled states from spontaneous parametric downconversion," *Eur. Phys. Lett.* **92**, 20007(1-6) (2010).

2009

[79] A. Allevi, A. Andreoni, M. Bondani, and E. Puddu, "Phase and intensity correlations produced by second-order non-linear interactions: from holographic imaging to ghost-imaging," *J. Holography and Speckle* **5,** 42-51 (2009). Invited paper.

[80] M. Bondani, A. Allevi, A. Agliati, and A. Andreoni, "Self-consistent characterization of light statistics", *J. Mod. Opt.* **56**, 226-231 (2009).

[81] A. Allevi, M. Bondani, and A. Andreoni, "Nonclassical tripartite field with macroscopic intensity," *Int. J. Quant. Inf.* **7**, 205-211 (2009).

[82] M. Bondani, A. Allevi, and A. Andreoni, "Wigner function of pulsed fields by direct detection," *Opt. Lett.* **34**, 1444-1446 (2009). Also selected and published in Virtual Journal of Quantum Information (June 2009) and in Virtual Journal of Ultrafast Science (June 2009).

[83] J. Peřina, J. Křepelka, J. Peřina Jr., M. Bondani, A. Allevi, and A. Andreoni, "Correlations in photon-numbers and integrated intensities in parametric processes involving three optical fields," *Eur. Phys. J. D* **53**, 373-382 (2009).

[84] A. Allevi, A. Andreoni, M. Bondani, G. Brida, M. Genovese, M. Gramegna, P. Traina, S. Olivares, M. G. A. Paris, and G. Zambra, "State reconstruction by on/off measurements," *Phys. Rev. A* **80**, 022114(1-5) (2009).

[85] M. Bondani, A. Allevi, and A. Andreoni, "Light statistics by non-calibrated linear photodetectors," *Adv. Sci. Lett.* **2**, 463-468 (2009).

[86] A. Andreoni, A. Allevi, and M. Bondani, "Photon-number statistics measured with a noncounting PMT," *J. Russ. Laser Res.* **30**, 417-425 (2009).

[87] A. Allevi, M. Bondani, M. G. A. Paris, and A. Andreoni, "Demonstration of a bright and compact source of tripartite nonclassical light," *Phys. Rev. A* **78**, 063801(1-7) (2008). Also selected and published in Virtual Journal of Ultrafast Science, Photonics (Jan. 2009).

2008

[88] A. Allevi, M. Bondani, M. G. A. Paris, and A. Andreoni, "Quantum and classical correlations in tripartite Gaussian states of light," *Eur. Phys. J. Special Topics* **160,** 1-10 (2008).

[89] M. Bondani, A. Allevi, G. Zambra, A. Andreoni, J. Peřina, J. Krepelka, and J. Peřina Jr., "Experimental demonstration of sub-shot-noise intensity correlations in an intense twin beam," *Eur. Phys. J. Special Topics* **160**, 33-41 (2008).

2007

[90] G. Zambra, A. Allevi, A. Andreoni, M. Bondani, and M. G. A. Paris, "Nontrivial photon statistics with low resolution-threshold photon counters," *Int. J. Quant. Inf.* **5**, 305-309 (2007).

[91] M. Bondani, A. Allevi, and A. Andreoni, "Calculation of the 3D interaction geometry for two interlinked $\chi^{(2)}$ processes generating entangled triplets," *Int. J. Quant. Inf.* **5**, 9-15 (2007).

[92] M. Bondani, A. Allevi, G. Zambra, M. G. A. Paris, and A. Andreoni, "Sub-shot-noise photon-number correlation in a mesoscopic twin beam of light," *Phys. Rev. A* **76**, 013833(1-5) (2007).

[93] J. Peřina, J. Křepelka, J. Peřina Jr., M. Bondani, A. Allevi, and A. Andreoni, "Experimental joint signal-idler quasidistributions and photon-number statistics for mesoscopic twin beams," *Phys. Rev. A* **76**, 043806(1-7) (2007).

2006

[94] M. Bondani, A. Allevi, E. Gevinti, A. Agliati, and A. Andreoni, "3D phase-matching conditions for the generation of entangled triplets by $\chi^{(2)}$ interlinked interactions," *Opt. Express* **14**, 9838-9843 (2006).

[95] A. Allevi, M. Bondani, A. Ferraro, and M. G. A. Paris, "Classical and quantum aspects of multimode parametric interactions," *Laser Phys.* **16**, 1451-1477 (2006).

2005

[96] E. Puddu, A. Allevi, A. Andreoni, and M. Bondani, "Chaotic imaging in frequency downconversion," *Opt. Lett.* **30**, 1294-1296 (2005).

2004

[97] M. Bondani, A. Allevi, E. Puddu, A. Andreoni, A. Ferraro, and M. G. A. Paris, "Properties of two interlinked $\chi^{(2)}$ interactions in noncollinear phase matching," *Opt. Lett.* **29**, 180-182 (2004) and erratum **29**, 1417 (2004).

[98] M. Bondani, A. Allevi, E. Puddu, A. Brega, and A. Andreoni, "Difference-frequency-generated holograms of two-dimensional objects," *J. Opt. Soc. Am. B* **21**, 280-288 (2004).

[99] A. Ferraro, M. G. A. Paris, M. Bondani, A. Allevi, E. Puddu, and A. Andreoni, "Three-mode entanglement by interlinked nonlinear interactions in optical $\chi^{(2)}$ media," *J. Opt. Soc. Am. B* **21**, 1241-1249 (2004).

[100] A. Allevi, A. Andreoni, M. Bondani, A. Ferraro, M. G. A. Paris, and E. Puddu, "Quantum and classical properties of the fields generated by two interlinked second-order non-linear interactions," *J. Mod. Opt.* **51**, 1031-1036 (2004).

[101] E. Puddu, A. Allevi, A. Andreoni, and M. Bondani, "All-optical logic operations by means of two interlinked $\chi^{(2)}$ interactions in a single crystal," *J. Opt. Soc. Am. B* **21**, 1839-1847 (2004).

2003

[102] M. Bondani, A. Allevi, and A. Andreoni, "Holography by nondegenerate $\chi^{(2)}$ interactions," *J. Opt. Soc. Am. B* **20,** 1-13 (2003).

Proceedings

2020

[1] G. Chesi, A. Allevi, and M. Bondani, "Effect of cross-talk on conditional measurements performed with multi-pixel photon counters," IMEKO TC-4 2020 Palermo, Italy, September 14-16, 2020.

[2] G. Chesi, A. Allevi, and M. Bondani, "Exploiting Silicon photomultipliers for measuring nonclassical optical states," Fis Mat 2019, EPJ Web of Conferences **230**, 00002 (2020).

2017

[3] A. Allevi, M. Bina, S. Olivares, and M. Bondani, "Hybrid Homodyne-like Detection Scheme with Photon-Number-Resolving Detectors," *2017 Progress In Electromagnetics Research Symposium - Spring (PIERS)*, 2874-2878 (2017).

2015

[4] A. Allevi, M. Bina, M. Bondani and S. Olivares, "Real-time phase-reference monitoring in a quasi-optimal coherent-state receiver," Proc. *SPIE* **9505**, 95050J(1-7) (2015).

[5] A. Allevi, M. Lamperti, R. Machulka, O. Jedrkiewicz, E. Brambilla, A. Gatti, J. Peřina

Jr., O. Haderka, and M. Bondani, "Effects of pump depletion on spatial and spectral properties of parametric down-conversion," Proc. *SPIE* **9505**, 950508(1-7) (2015).

[6] A. Allevi, J. Galinis, M. Lamperti, R. Machulka, J. Peřina Jr., O. Haderka, and M. Bondani, "Spectral coherence of twin beams by single-shot measurements with a fiber spectrometer," Proc. *SPIE* **9505**, 95050R(1-6) (2015).

[7] A. Allevi, O. Jedrkiewicz, O. Haderka, J. Peřina Jr. and M. Bondani, "Evolution of spatio-spectral coherence properties of twin beam states in the high gain regime," Proc. *SPIE* **9505**, 95050S(1-6) (2015).

[8] M. Bondani, A. Allevi, J. Soubusta, and O. Haderka, "Joint International Physics Summer School - Optics," Proc. *SPIE* **9793**, 979309(1-7) (2015).

2014

[9] M. Bondani, A. Allevi, L. Nardo, and F. Favale, "The "LuNa" project: experimental didactic modules exploiting portable setups to teach in Primary and Secondary Schools," Proc. *SPIE* **9289,** 92892D(1-8) (2014).

2012

[10] 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," *Proc. SPIE* **8375**, 837505(1-10) (2012). Invited paper.

[11] A. Allevi, L. Nardo, M. Ramilli, and M. Bondani, "Photon-number statistics and correlations with Silicon photomultipliers," *Proc. SPIE* **8375**, 83750T(1-9) (2012).

2010

[12] M. Ramilli, M. Bondani, A. Allevi, M. Caccia, A. Andreoni, and V. Chmill, "Analysis of the response of Silicon Photomultipliers to optical light fields," *proceedings of "9th International conference on large scale applications and radiation hardness of semiconductor detectors*" (2010).

2009

[13] M. Bondani, A. Allevi, and A. Andreoni, "Wigner function reconstruction by hybrid photodetectors in the linear regime," *Proc. SPIE* **7320,** 732008(1-8) (2009). Invited paper.

2008

[14] J. Peřina Jr., J. Peřina, O. Haderka, J. Křepelka, M. Hamar, V. Michálek, M. Bondani, A. Allevi, and A. Andreoni, "Photocount measurements as a tool for investigation of non-classical properties of twin beams," *Proc. SPIE* **7141**, 714104(1-6) (2008). Invited paper.

2007

[15] M. Bondani, A. Allevi, G. Zambra, M. G. A. Paris, A. Andreoni, J. Peřina, J. Křepelka, and J. Peřina Jr., "Nonclassical mesoscopic twin-beam of light," *Proc. SPIE* **6710**, 671004(1-7) (2007). Invited paper.

Conference abstract

2019

[1] G. Chesi, A. Allevi, and M. Bondani, "Second-Harmonic Generation as a Source of Nonclassical Light," In: Quantum Information and Measurement (Rome, April 4-6, 2019), OSA Congress, T5A.19.

[2] S. Olivares, A. Allevi, M. G. A. Paris, and M. Bondani, "Quantum-State Tomography with Photon-Number-Resolving Homodyne Detection," In: Quantum Information and Measurement (Rome, April 4-6, 2019), OSA Congress, S4B.2.

[3] A. Allevi, G. Chesi, L. Nardo, and M. Bondani, "Detecting quantum features in the real world," In: Quantum Information and Measurement (Rome, April 4-6, 2019), OSA Congress, T5A.23.

2014

[4] A. Allevi, S. Olivares, M. Bina, and M. Bondani, "The bracket states: a useful tool for communication protocols with coherent states". In: Quantum Information and Measurement (Berlin, March 18-20, 2014), OSA Congress.

[5] M. Lamperti, A. Allevi, M. Bondani, R. Machulka, V. Michálek, O. Haderka, and J. Peřina Jr., "Generation of sub-Poissonian non-Gaussian states from multimode twin beams by photon-number-resolving detectors". In: Quantum Information and Measurement (Berlin, March 18-20, 2014), OSA Congress.

2012

[6] A. Allevi, S. Olivares, M. G. A. Paris, and M. Bondani, "Generation of non-Gaussian pulsed states by conditional measurements". In: Quantum Information and Measurement (Berlin, March 19-21, 2012), OSA Congress.

[7] A. Allevi and M. Bondani, "Ghost imaging by intense multimode twin beam". In: Quantum Information and Measurement (Berlin, March 19-21, 2012), OSA Congress.

Chapters in books

2017

[1] A. Allevi and M. Bondani, "Nonlinear and Quantum Optical Properties and Applications of Intense Twin-Beams," *Adv. At. Mol. Opt. Phys.* **66**, 49-110 (2017) (invited).

2012

[2] M. Ramilli, A. Allevi, L. Nardo, M. Bondani and M. Caccia, "Silicon Photomultipliers: characterization and applications," in Sanka Gateva (ed.), *Photodetector*, Intech, Rijeka (Croatia), ISBN 979-953-307-350-6, pp.77-100 (2012).

2011

[3] A. Allevi and M. Bondani, "Generation and detection of mesoscopic pulsed states of light for Quantum Information," in Anatoli V. Andreev (ed.), *Femtosecond-Scale Optics*, Intech, Rijeka (Croatia), ISBN 978-953-307-769-7, pp. 287-306 (2011).

Books

2025

M. Bondani and A. Allevi, "John F. Clauser, Alain Aspect e Anton Zeilinger" in I NOBEL DELLA SCIENZA - Le scoperte che hanno fatto la storia, Out of Nowhere S.r.l. Milan and Le Scienze S.p.A. Rome.

INVITED TALKS

This is the list of the invited talks. The name of the presenter is indicated in red.

9-10 December 2025

From Quantum Astronomy to Quantum Communications, Asiago (Italy)
A. Allevi
Mesoscopic optical states for quantum communication technology

22 - 26 September 2025

111th Italian SIF congress, Palermo (Italy)
S. Cassina, A. Pozzoli, G. Vesco, M. Lamperti, M. Marangoni, and A. Allevi
Up-conversion photon-number-resolving detector

23 - 27 June 2025

29th CEWQO 2025, Central European Workshop on Quantum Optics, Vilnius (Lithuania)
L. Razzoli, A. Pozzoli, and A. Allevi
Hybrid state discrimination strategy exploiting classical and nonclassical features

3 - 7 July 2023

27th CEWQO 2023, Central European Workshop on Quantum Optics, Milan (Italy)
A. Allevi, F. Molteni, S. Zambelli, and M. Bondani
Mesoscopic states of light for the implementation of novel underwater quantum communication protocols

18 - 22 September 2023

15th Italian Quantum Information Science Conference 2023, Trieste (Italy)
A. Allevi

	Mutual information of a homodyne- like detection scheme for binary phase- shift-keyed communication protocols
12 - 16 September 2022	14th Italian Quantum Information Science Conference 2022, Palermo (Italy) A. Allevi, F. Molteni, S. Zambelli, and M. Bondani *Underwater Quantum Communication with mesoscopic twin-beam states of light*
18 – 22 July 2022	The 30th annual International Laser Physics Workshop (LPHYS'22), online version A. Allevi, F. Molteni, S. Zambelli, and M. Bondani *Mesoscopic twin-beam states for underwater Quantum Communication*
11-15 October 2021	13th Italian Quantum Information Science Conference 2021, Napoli (Italy) A. Allevi and M. Bondani *Mesoscopic twin-beam states propagating through noisy and lossy channels for novel Quantum Communication protocols*
19 – 23 July 2021	The 29th annual International Laser Physics Workshop (LPHYS'21), online version A. Allevi and M. Bondani *Survival of mesoscopic twin-beam states propagating in lossy and noisy channels*
9 – 12 September 2019	12th Italian Quantum Information Science Conference 2019, Milan (Italy) A. Allevi, G. Caiazzo, M. Bina, S. Olivares, M. G. A. Paris, M. Bondani *Homodyne-like detection for Quantum Information Science*
16 – 20 July 2018	The 27th annual International Laser Physics Workshop (LPHYS'18), Nottingham (UK) A. Allevi, G. Chesi, L. Malinverno, R. Santoro, M. Caccia, M. Bondani *Testing Nonclassicality of Mesoscopic Twin-Beam States with Silicon Photomultipliers*
25 – 27 September 2017	3rd AQMeeting 2017, Varazze (Italy) G. Chesi, L. Malinverno, A. Allevi, R. Santoro, M. Caccia, and M. Bondani *Can Silicon photomultipliers open a new era in quantum optics experiments?*
24 - 26 February 2016	Quantum Limits of Optical Communication, Warsaw (Poland) A. Allevi, M. Bina, S. Olivares, and M. Bondani *Homodyne-like detection with photon-number resolving detectors*
10 - 12 September 2015	8th Italian Quantum Information Science Conference 2015, Monopoli (Italy) A. Allevi, M. Bina, S. Olivares and M. Bondani *Homodyne-like detection with photon-number resolving detectors*
15 - 19 September 2014	7th Italian Quantum Information Science Conference 2014, Salerno (Italy) A. Allevi, O. Jedrkiewicz, E. Brambilla, A. Gatti, J. Peřina Jr., O. Haderka, R. Machulka, and M. Bondani *Spatio-spectral modes description of the radiation field produced by high-gain parametric down conversion*
24 - 26 September 2013	6th Italian Quantum Information Science Conference 2013, Como (Italy) A. Allevi, S. Olivares, and M. Bondani *Phase-dependent Correlations for Quantum Information*
18 - 20 April 2011	4th Italian Quantum Information Science Conference 2011, Vietri sul Mare (Italy) A. Allevi and M. Bondani *Generation of non-Gaussian pulsed states by exploiting quantum and classical correlations.*

CONTRIBUTED TALKS

8 - 12 September 2025	17th Italian Quantum Information Science Conference 2025, Bologna (Italy) L. Razzoli, A. Pozzoli, and A. Allevi Hybrid state-discrimination strategy exploiting classical and nonclassical resources
18-24 May 2025	Workshop “Quantum 2025 - From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology & Sensing”, Turin (Italy) S. Cassina, M. N. Notarnicola, M. Lamperti, S. Olivares, and A. Allevi, Silicon-photomultiplier-based hybrid receiver for applications to quantum communication protocols
1 - 5 July 2024	28th CEWQO 2024, Central European Workshop on Quantum Optics, Olomouc (Czech Republic) A. Allevi Experimental qualification of a homodyne-like receiver for quantum-key-distribution protocols M. Bondani, A. Allevi, S. Cassina, and A. Parola Comprehensive Analysis and Quantum Tomography of Silicon Photomultiplier Detectors for Quantum Technologies
10 - 15 September 2023	Workshop “Quantum 2023 - From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology & Sensing”, Turin (Italy) A. Allevi, S. Cassina, G. Cenedese, C. Bianciardi, and M. Bondani Super-thermal light for applications Communication to Imaging and Quantum Communication
13 – 17 September 2021	107th Italian SIF Congress, online version A. Allevi and M. Bondani Endurance of mesoscopic twin-beam states propagating in noisy channels
14 - 18 September 2020	106th Italian SIF Congress, online version A. Allevi, F. Pallotta, and M. Bondani Optics Summer School: ``Lockdown´´ edition
27 – 31 May 2019	Workshop “Quantum 2019 - From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology & Sensing”, Turin (Italy) A. Allevi, G. Chesi, and M. Bondani Testing nonclassicality in lossy transmission and detection systems
17 – 20 September 2018	11th Italian Quantum Information Science Conference 2018, Catania (Italia) A. Allevi and M. Bondani Preserving nonclassicality in noisy communication channels
12 – 15 September 2017	10th Italian Quantum Information Science Conference 2017, Florence (Italy) A. Allevi, G. Chesi, L. Malinverno, R. Santoro, M. Caccia, and M. Bondani Demonstrating the quantum properties of mesoscopic optical states with Silicon photomultipliers
8 – 12 May 2017	Workshop “Quantum 2017 - From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology & Sensing”, Turin (Italy) A. Allevi, G. Chesi, R. Machulka, O. Haderka, J. Peřina Jr., and M. Bondani Non-trivial structures in very intense twin beam states
6 - 10 July 2015	22nd CEWQO 2015, Central European Workshop on Quantum Optics, Warsaw (Poland) A. Allevi, M. Bondani, R. Machulka, J. Peřina Jr. and O. Haderka Near-to-far-field evolution of twin beams ``SPIE Optics+Optoelectronics'', Prague (Czech Republic)

13 - 16 April 2015	A. Allevi, M. Bina, M. Bondani and S. Olivares Real-time phase-reference monitoring in a quasi-optimal coherent-state receiver
26 - 30 May 2014	VII Workshop ``Advances in Foundations of Quantum Mechanics and Quantum Information with atoms and photons'', Turin (Italy) A. Allevi, M. Bondani, S. Olivares, and M. Bina The bracket states: a useful tool for communication protocols with coherent states
09 - 13 September 2013	Italian National Conference on Condensed Matter Physics, Milan (Italy) A. Allevi, M. Bondani, M. Lamperti, R. Machulka, V. Michálek, O. Haderka, and J. Peřina Jr. Characterizing the non-classical nature of mesoscopic optical twin-beam states
10 – 12 July 2013	Nonlinear Dynamics of Electronic Systems (NDES) 2013, Bari (Italy) A. Allevi, M. Lamperti, M. Bondani, R. Machulka, O. Haderka, J. Peřina Jr., and V. Michálek Efficient selection of mesoscopic twin-beam states for the optimal production of sub-Poissonian light
24 - 28 June 2013	13th International Conference on Squeezed States and Uncertainty Relations, Nuremberg (Germany) A. Allevi, M. Lamperti, M. Bondani, Jan Peřina Jr., V. Michálek, O. Haderka, and R. Machulka Characterizing the nonclassical nature of mesoscopic optical twin-beam states
21 - 25 May 2012	VI Workshop ``Advances in Foundations of Quantum Mechanics and Quantum Information with atoms and photons'', Turin (Italy) A. Allevi, S. Olivares, and M. Bondani Manipulating non-Gaussianity of pulsed optical states
19 - 21 March 2012	Osa Meeting, ``Quantum Information and Measurement'', Berlin (Germany) A. Allevi, S. Olivares, M. G. A. Paris, M. Bondani Generation of non-Gaussian pulsed states by conditional measurements
23 - 29 May 2010	V Workshop ``Advances in Foundations of Quantum Mechanics and Quantum Information with atoms and photons'', Turin (Italy) A. Allevi, M. Bondani, A. Andreoni Wigner function reconstruction of pulsed fields by direct detection
19 - 23 May 2008	IV Workshop ``Advances in Foundations of Quantum Mechanics and Quantum Information with atoms and photons'', Turin (Italia) A. Allevi, A. Andreoni, M. Bondani, M. G. A. Paris Generation and characterization of a three-mode entangled state of radiation
1 - 5 June 2007	CEWQO 2007, 14th Central European Workshop on Quantum Information, Palermo (Italy) A. Allevi, A. Andreoni, M. Bondani, M. G. A. Paris Quantum and classical correlations in tripartite states of light

INVITED SEMINARS

6 December 2017	Joint Laboratory of Optics, Palacky University, Olomouc (Czech Republic) *Can Silicon photomultipliers open a new era in quantum optics experiments?*
26 May 2016	Joint Laboratory of Optics, Palacky University, Olomouc (Czech Republic) *Homodyne-like detection with photon-number resolving detectors*
11 November 2014	Joint Laboratory of Optics, Palacky University, Olomouc (Czech Republic)

	Generation and characterization of a three-mode entangled state of light
11 February 2014	Joint Laboratory of Optics, Palacky University, Olomouc (Czech Republic) *Wigner function reconstruction of pulsed fields by direct detection*
20 November 2013	Joint Laboratory of Optics, Palacky University, Olomouc (Czech Republic) *Phase-dependent correlations for quantum information*
18 June 2013	Joint Laboratory of Optics, Palacky University, Olomouc (Czech Republic) *Characterizing the nonclassical nature of mesoscopic optical twin-beam states*
26 June 2012	Joint Laboratory of Optics, Palacky University, Olomouc (Czech Republic) *Manipulating non-Gaussianity of phase-averaged coherent states.*

SCIENTIFIC SEMINARS FOR THE GENERAL PUBLIC

22 January 2026	Luce quantistica e il futuro delle comunicazioni (Sala bianca del Teatro Sociale, Como)
September 2025	Podcast on the concept of entanglement (You-Tube channel Step-by-step fisica e mate, 29k views, https://www.youtube.com/watch?v=a6wSMfrQC24)
7 May 2024	Il colore del cielo tra scienza, arte e tecnologia (Associazione Culturale Scholè, Roccella Jonica)
28 September 2023	La luce dà spettacolo (Tempio Voltiano, Como)
19 April 2023	Vedere la luce: il meccanismo della visione e la percezione dei colori (Associazione Culturale Scholè, Roccella Jonica)
15 March 2023	Quanto ne sai? Entanglement, un problema da Nobel (You-Tube channel of Italian Quantum weeks, 3400 views, https://www.youtube.com/watch?v=8fZnwdXNh44).

NATIONAL AND INTERNATIONAL SCIENTIFIC COLLABORATIONS

This is the list of collaborators sharing at least one publication with Alessia Allevi

- Dr. M. Bondani
  Istitute for Photonics and Nanotechnologies (IFN), CNR, Como, Italy
- Prof. M. G. A. Paris and Prof. S. Olivares
  Department of Physics, **University of Milan**, Milan, Italy
- Dr. M. Genovese
  Division of Quantum Optics, **INRiM**, Turin, Italy
- Prof. F. Sciarrino and Prof. P. Mataloni
  Sapienza University of Rome, Rome, Italy
- Prof. M. Caccia, Prof. R. Santoro, Prof. M. Prest, Prof. L. Nardo, Prof. E. Brambilla, Prof. M. Clerici, Dott. M. Lamperti
  Department of Science and High Technology, **University of Insubria**, Como, Italy
- Dr. E. Vallazza
  INFN – Sezione di Milano Bicocca, Milano, Italy
- Dr. O. Jedrkiewicz
  IFN, CNR, Como, Italy

- Dr. A. Gatti
  IFN, CNR, Milano, Italy

- Prof. M. Marangoni
  Politecnico of Milan, Polo Territoriale di Lecco, Lecco, Italy

- Dr. L. Razzoli
  University of Pavia, Pavia, Italy

- Dr. Michele N. Notarnicola
  Palacky University, Olomouc, Czech Republic

- Prof. J. Peřina, Prof. J. Peřina Jr., Prof. O. Haderka
  Joint Laboratory of Optics, **Palacky University** and Institute of Physics of Academy of Sciences of the Czech Republic (CAS), Olomouc, Czech Republic

- Dr. M. Chekhova
  Max-Planck Institute for the Science of Light, Erlangen, Germany

- Prof. P. Marian and Prof. T. A. Marian
  Centre for Advanced Quantum Physics, **University of Bucharest**, Bucharest, Romania.

SCIENTIFIC PROJECTS

2026: Member of the Research Team in the Far Project ”Double weak-field homodyne receiver for the decoding of quadrature-amplitude-modulated coherent states”

2025 – 2027: Member of Insubria Unit for the Project “Collabora e Innova – Recover AI”

2022 - 2025 Scientific Responsible for the project “Novel Quantum Communication protocols for power systems and smart grids” funded by D. M. 737/2021

2021 - 2026: Unit Responsible (Insubria Unit) for the Project “Italian Quantum Weeks”

2016 - 2018: Participant in the Joint Bilateral Agreement CNR/CAS ``Statistical properties of intense twin beams'', leaded by Dr. M. Bondani (Institute for Photonics and Nanotechnology, CNR) and by Prof. Jan Peřina Jr. (Institute of Physics of Academy of Sciences of the Czech Republic)

2014 - 2015: Participant in the 2-year INFN project - “SQUOP Silicon photomultipliers for QUantum Optics”, in collaboration with Dr. E. Vallazza (INFN Laboratories, Trieste) and the group leaded by Prof. M. Prest (University of Insubria)

2012 - 2015: Co-investigator of a FIRB - Future in Research (“Light correlations for high-precision innovative sensing - LiCHIS” - RBFR10YQ3H) project funded by the Italian Ministry of University and Research (Unit Responsible).

AWARDS AND OTHER RECOGNITIONS

2021: Award for one of the best communications at the Sif Congress 2021. Title of the communication: “Endurance of mesoscopic twin-beam states propagating in noisy channels”.

FOREIGN STAYS

Several short stays (roughly 1 month per year) at: Joint Laboratory of Optics of Palacky University, Olomouc, Czech Republic (2012 - 2019).

ORGANIZATION OF SCIENTIFIC MEETINGS:

- Local organizer of the CLIP Kickoff meeting, held in Como (September 16-18, 2025)
- Main organizer of the "Quantum Women's Day", held in Como (April 15, 2025)
- Local organizer of the "12th Italian Quantum Information Science Conference", held in Milan (September 9 - 12, 2019)
- Organizer of the Joint International Physics Summer School – Optics, devoted to high-school students and teachers (Como-Olomouc, 2013 – today)
- Organizer of the Workshop "Officina di didattica e divulgazione della Fisica", held in Como (2013 - today)
- Local organizer of the "6th Italian Quantum Information Science Conference", held in Como (September 24 - 26, 2013)
- Local organizer of the Summer School STELLA (The School in Experiments with Lasers and Theory on Gravitational Physics), held at the University of Insubria (June 20 – July 8, 2011).

TEACHING ACTIVITIES

Teacher at the University of Insubria

- 2025 – 2026 Quantum Optics for Quantum Information – Postgraduate Course in Quantum Technologies (teacher)
- 2025 – today Introduction to Modern Physics (teacher)
- 2025 – today Physics teaching laboratory for the 60-credit teacher training course (teacher)
- 2024 – today Quantum Technologies Course for PhD students in Physics and Astrophysics (teacher)
- 2023 – today Basics and Applications of Nonlinear and Quantum Optics (teacher)
- 2023 – 2024 Quantum Optics for Quantum Information – Postgraduate Course in Quantum Technologies (teacher)
- 2021 – 2022 Quantum Optics for Quantum Information – Postgraduate Course in Quantum Technologies (teacher)
- 2020 - today: Electromagnetism for Physicists (teacher)
- 2019/2020 Academic Year: Optics Laboratory for Physicists (teacher)
- 2015 - 2025: Physics (Mechanics and Fluids) for Engineers (teacher)
- 2015/2016 Academic Year: Physics Lab II for Physicists (teacher)
- 2011 - 2022: Nonlinear Optics for Physicists (teacher)
- 2007: Physics Lab I for Physicists (assistant).

Supervisor

- 2025 - today: Tutor of a PhD student in Physics and Astrophysics
- 2022 - today: Tutor of a PhD student in Physics and Astrophysics (PNRR program)
- 2022 – 2024: Scientific Responsible for an RTD-A position (D. M. 737/2021)
- 2022 - 2023: supervisor of a 1-year junior grant entitled ``Implementation of a portable SiPM-based detection device for applications to Quantum Communication'' at the University of Insubria
- 2018 - 2019: Responsible for the research activity, entitled ``Quantum Correlations'', of Dr. Radek Machulka during his short-term mobility at the University of Insubria
- 2018 – 2019 External supervisor of 1 master student, Department of Physics, University of Milan Bicocca, Italy
- 2011 – today Supervisor of 8 bachelor students and 8 master students, Department of Science and HighTechnology, University of Insubria, Italy
- 2020 - 2021: supervisor of a 1-year junior grant entitled ``Investigating the effect of noise sources in the free-space transmission of mesoscopic quantum states of light'' at the University of Insubria
- 2017 - 2018: supervisor of a 1-year junior grant entitled ``Homodyne-like detection scheme for applications to Quantum Information'' at the University of Insubria
- 2016 - 2020: Tutor of a PhD thesis in Physics and Astrophysics
- 2009 and 2016 External supervisor of 1 master student and 1 bachelor student, respectively, Department of Physics, University of Milan, Italy
- 2015: Responsible for the internship of Ievgen Arkhipov, PhD student of Palacky University of Olomouc (Czech Republic) at the University of Insubria
- 2013: supervisor of a 1-year grant entitled ``Generation and characterization of nonclassical states of light for applications to Quantum Information'' at the University of Insubria
- 2012: Responsible for the internship of Justinas Galinis, PhD student of Vilnius University (Lithuania) at the University of Insubria.

Reviewing activities

- Member of competition committees for 3 RTD-A and 1 RTT researcher positions.
- Member of 13 doctoral examination commissions (University of Insubria and other Italian universities).
- Evaluator of 1 European project.
- 2025: Member of the final examination committee for the 60-credit teacher training course

MEMBERSHIP OF SCIENTIFIC SOCIETIES

- 2025: Sisteq (Società Italiana di Scienze e Tecnologie Quantistiche)
- 2013 and 2015: Optical Society of America

SCIENTIFIC AFFILIATIONS

Association with research assignment at the Institute of Photonics and Nanotechnology (IFN) of the National Research Council (CNR) as part of Projects DFM.AD005.120 (from 01-04-2017 to 31-12-2022) and DFM. AD005.432 (from 01-01-2023 to present).

OUTREACH

	Allevi Alessia is involved in several orientation and outreach activities devoted to secondary and high school students
2026	Participant in the Girl's Day project promoted by the Chamber of Commerce and dedicated to promoting STEM subjects in secondary schools
2025	Participant in the STEM project “La luce dà spettacolo” (Liceo Fermi, Cantù)
2023 and 2024	Participant in the DM934 project 4U University-Lab aimed at promoting university orientation among high-school students
2023 and 2024	Teacher of lessons on the nature of light for high-school students (Liceo Volta, Reggio Calabria)
2023-2024	Involved in the organization of the activities for the Liceo Matematico project (Liceo Ferraris, Varese)
2023	Proponent and organizer of the PCTO project “La luce dà spettacolo” devoted to high-school students
2018 - today	Involved in the organization and teaching of the PCTO project “Introduzione alle scienze forensi” devoted to high-school students
2016 - 2023	Representative of Physicists in the Orientation Committee of the University of Insubria
2013 - today	Local organizer of the Workshop “Officina di didattica e divulgazione della Fisica”, held in Como at the University of Insubria and devoted to high-school students and teachers
2013 - today	Co-organizer of the Joint International Physics Summer School – Optics, devoted to high-school students and teachers (Como-Olomouc, Czech Republic)
2013 - today	Involved in the activities of the European Researchers’ Night at the University of Insubria
2011 - today	Involved in the Open Day of the University of Insubria. In the past, she presented some seminars on Nonlinear Optics (2011-2012), she realized and explained some optical setups, and she organized some visits to the Lab of Quantum Optics, in which she usually works
2010 - today	Presenter of the bachelor’s degree course in Physics at the stand of the University of Insubria at the annual event “YOUNG - Orienta il tuo futuro” held at Lariofiere of Erba

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2009 – today	Collaborator on the project “LuNa – La natura della Luce nella luce della Natura”, funded by Fondazione Banca del Monte di Lombardia and by the University of Insubria
24 - 28 August 2009	Teacher within the project Learning week “Tutti intorno alla luce” – Associazione CNOS/FAP Regione Lombardia
2006/2009	Involved in several orientation activities devoted to high-school students at the University of Insubria
15 December 2005 - 15 January 2006	Guide to the exhibition “La Fisica attorno a noi” organized by the Department of Physics and Mathematics of the University of Insubria.

Como, 25/01/2026

Firma