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.

RESEARCH ACTIVITY

Her research activity includes some important topics of light-matter interaction, such as nonlinear optics, quantum optics, quantum information 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 realtime 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 (selfconsistent and ON/OFF procedures)
- use and characterization of different classes of photodetectors (photomultipliers, hybrid photodetectors, Siphotomultipliers, 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 secondharmonic 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 a homodyne-like detection scheme 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.

Her first publication dates back to 2003. Till now she has 97 publications on peer-reviewed international journals, several conference proceedings, and 3 chapters in books. She presented her research in several conferences and workshops, and also in some invited seminars. She received about 1639 citations and her H-index is 24 (Scopus, April 2025).

She is Referee of several peer-reviewed international journals, such as such as New Journal of Physics, Optica, 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.

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 Peerreviewed International Journals

2025

[1] 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)

[2] 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	[3] 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", <i>Opt. Express</i> 32 , 39846-39859 (2024).
	[4] S. Cassina, G. Cenedese, A. Allevi, and M. Bondani, "Speckled-speckle field as a resource for imaging techniques", <i>Sci. Rep.</i> 14 , 15161 (2024).
	[5] S. Cassina, G. Cenedese, M. Lamperti, M. Bondani, and A. Allevi, "On the use of superthermal light for imaging applications", <i>Phys. Lett. A</i> 495 , 129300 (2024).
	[6] S. Cassina, G. Cenedese, M. Bondani, and A. Allevi, "Application of superthermal light to imaging and quantum communication protocols", <i>Int. J. Quantum Inform.</i> 2450025 (2024).
2023	[7] A. Allevi and M. Bondani, "Thermal and superthermal noise signals as resources for underwater quantum communication", <i>Phys. Lett. A</i> 492 , 129207 (2023).
	[8] A. Allevi and M. Bondani, "Feasibility of a novel Quantum Communication protocol in Jerlov type I water", <i>Entropy</i> 25 , 16 (2023).
	[9] C. Bianciardi, A. Allevi, and M. Bondani, "Experimental validation of the statistical properties of speckled-Speckle fields in the mesoscopic intensity regime", <i>Appl. Sci.</i> 13 , 4490 (2023).
	[10] A. Allevi, F. Molteni, S. Zambelli, and M. Bondani, "Optimizing the propagation of mesoscopic twin-beam states for novel quantum communication protocols", <i>Int. J. Quantum Inform.</i> 21 , 2340004 (2023)
2022	[11] A. Allevi and M. Bondani, "Towards underwater quantum communication in the mesoscopic intensity regime," <i>Opt. Express</i> 30 , 44175-44185 (2022).
	[12] A. Allevi, "Mesoscopic States of Light for the Detection of Weakly Absorbing Objects," <i>Photonics</i> 9 , 819 (2022).
	[13] A. Allevi, "Endurance of mesoscopic twin-beam states propagating in noisy channels," <i>Il Nuovo Cimento</i> , 45 C , 158 (2022).
	[14] A. Allevi and M. Bondani, "Novel scheme for secure data transmission based on mesoscopic twin beams and photon-number-resolving detectors," <i>Sci. Rep.</i> 12 , 15621 (2022).
	[15] A. Allevi and M. Bondani, "Multi-mode twin-beam states in the mesoscopic intensity domain," <i>Phys. Lett. A</i> 423 , 127828 (2022).
2021	[16] 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," <i>EPJ Quantum Technology</i> 8 , 4 (2021).
	[17] A. Allevi, S. Olivares, and M. Bondani, "Special issue on basics and applications in quantum optics," <i>Appl. Sci.</i> 11 , 10028 (2021).
	[18] A. Allevi and M. Bondani, "Effect of noisy channels on the transmission of mesoscopic twin-beam states," <i>Opt. Express</i> 29 , 32842-32852 (2021).
	[19] G. Chesi, A. Allevi, and M. Bondani, "Conditional measurements with silicon photomultipliers," <i>Appl. Sci.</i> 11 , 4579 (2021).

2020	[20] A. Allevi and M. Bondani, "Tailoring asymmetric lossy channels to test the robustness of mesoscopic quantum states of light," <i>Appl. Sci.</i> 10 , 9094(1-12) (2020).
	[21] B. Giacomelli, A. Allevi, and M. Bondani, "Implementation of Popper's thought experiment with pseudo-thermal light," <i>Phys. Lett. A</i> 384 , 126482 (2020).
	[22] R. Machulka, J. Perina Jr., O. Haderka, A. Allevi, and M. Bondani, "Waves in intensity coherence of evolving intense twin beams," <i>Phys. Rev. A</i> 101 , 063841 (2020).
	[23] S. Olivares, A. Allevi, and M. Bondani, "On the role of the local oscillator intensity in optical homodyne-like tomography," <i>Phys. Lett. A</i> 384 , 126354 (2020).
	[24] G. Chesi, A. Allevi, and M. Bondani, "Effects of non-ideal features of Silicon photomultiplier on the measurement of quantum correlations," <i>Int. J. Quantum Inf.</i> 17 , 1941012(1-14) (2020).
2019	[25] G. Chesi, L. Malinverno, A. Allevi, R. Santoro, M. Caccia, and M. Bondani, "Measuring nonclassicality of mesoscopic twin-beam states with silicon photomultipliers," <i>Proceedings</i> 12 , 48(1-4) (2019).
	[26] A. Allevi and M. Bondani, "Preserving nonclassicality in noisy communication channels," <i>Proceedings</i> 12 , 3(1-4) (2019).
	[27] A. Allevi and M. Bondani, "Preserving nonclassical correlations in strongly unbalanced conditions," <i>J. Opt. Soc. Am. B</i> 36 , 3275-3281 (2019). <i>Editors' Pick.</i>
	[28] S. Olivares, A. Allevi, G. Caiazzo, M. G. A. Paris, and M. Bondani, "Quantum tomography of light states by photon-number-resolving detectors," <i>New. J. Phys.</i> 21 , 103045 (2019).
	[29] G. Chesi, A. Allevi, and M. Bondani, "Autocorrelation functions: a useful tool for both state and detector characterisation," <i>Quantum Meas. Quantum Metrol.</i> 6 , 1-6 (2019).
	[30] G. Chesi, L. Malinverno, A. Allevi, R. Santoro, M. Caccia, A. Martemiyanov, and M. Bondani, "Optimizing Silicon photomultipliers for Quantum Optics," <i>Sci. Rep.</i> 9 , 7433(1-12) (2019).
	[31] G. Chesi, M. M. Wauters, N. Fasola, A. Allevi, and M. Bondani, "Second harmonic revisited: An analytic quantum approach," <i>Appl. Sci.</i> 9 , 1690(1-14) (2019).
	[32] G. Chesi, L. Malinverno, A. Allevi, R. Santoro, M. Caccia, and M. Bondani, "Measuring nonclassicality with silicon photomultipliers," <i>Opt. Lett.</i> 44 , 1371-1374 (2019).
2018	[33] A. Allevi and M. Bondani, "Can nonclassical correlations survive in the presence of asymmetric lossy channels?," <i>Eur. Phys. J. D</i> 72 , 178(1-6) (2018).
2017	[34] A. Allevi, M. Bina, S. Olivares, and M. Bondani, "Homodyne-like detection scheme based on photon-number-resolving detectors," <i>Int. J. Quantum Inf.</i> 15 , 1740016(1-11) (2017).
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	[36] A. Allevi, S. Cassina, and M. Bondani, "Super-thermal light for imaging applications," <i>Quantum Meas. Quantum Metrol.</i> 4 , 26-34 (2017).

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	[39] A. Allevi and M. Bondani, "Rainbow correlation imaging with macroscopic twin beam," <i>J. Opt.</i> 19 , 064001(1-7) (2017).
2016	[40] 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," <i>Sci. Rep.</i> 6 , 33802(1-12) (2016).
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2015	[43] O. Haderka, R. Machulka, J. Peřina Jr., A. Allevi, and M. Bondani, "Spatial and spectral coherence in propagating high-intensity twin beams," <i>Sci. Rep.</i> 5, 14365(1-8) (2015).
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2014	[45] 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," <i>J. Opt. Soc. Am. B</i> 31 , 20-25 (2014).
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	quantum-state engineering: Introduction to the feature issue,", <i>J. Opt. Soc. Am. B</i> 31 , PNR1-PNR2 (2014).
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2013	[56] A. Allevi, M. Bondani, P. Marian, T. A. Marian, and S. Olivares, "Characterization of phase-averaged coherent states," <i>J. Opt. Soc. Am. B</i> 30 , 2621-2627 (2013).
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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.
I	

	[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. <i>SPIE</i> 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. <i>SPIE</i> 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. <i>SPIE</i> 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. <i>SPIE</i> 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," <i>Proc. SPIE</i> 8375, 837505(1-10) (2012). <u>Invited paper</u> .
	[11] A. Allevi, L. Nardo, M. Ramilli, and M. Bondani, "Photon-number statistics and correlations with Silicon photomultipliers," <i>Proc. SPIE</i> 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," <i>proceedings of "9th International conference on large scale applications and radiation hardness of semiconductor detectors</i> " (2010).
2009	[13] M. Bondani, A. Allevi, and A. Andreoni, "Wigner function reconstruction by hybrid photodetectors in the linear regime," <i>Proc. SPIE</i> 7320 , 732008(1-8) (2009). <u>Invited paper</u> .
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," <i>Proc. SPIE</i> 7141 , 714104(1-6) (2008). <u>Invited paper</u> .
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," <i>Proc. SPIE</i> 6710 , 671004(1-7) (2007). <u>Invited paper</u> .
Conference abstract	[1] G. Chesi, A. Allevi, and M. Bondani, "Second-Harmonic Generation as a Source of

2019	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," <i>Adv. At. Mol. Opt. Phys.</i> 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.), <i>Photodetector</i> , 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.), <i>Femtosecond-Scale Optics</i> , Intech, Rijeka (Croatia), ISBN 978-953-307-769-7, pp. 287-306 (2011).
INVITED TALKS	This is the list of the invited talks. The name of the presenter is indicated in red.
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 10

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 <i>Homodyne-like detection for Quantum Information Science</i>
27 – 31 May 2019	Workshop "Quantum 2019 - From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology & Sensing", Turin (Italy) S. Olivares, A. Allevi, M. G. A. Paris, M. Bondani <i>Tomography of Quantum States with photon-number-resolving homodyne detection</i>
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
	G. Caiazzo, A. Allevi, M. Bondani, S. Olivares Quantum-State Tomography with Homodyne-Like Detection
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?
	<mark>G. Chesi</mark> , A. Allevi, and M. Bondani Second harmonic generation from Poissonian and non-Poissonian light: a quantum approach
8 – 12 May 2017	Workshop "Quantum 2017 - From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology & Sensing", Turin (Italy) A. Allevi, M. Bina, M. Bondani, and S. Olivares Homodyne-like detection via photon-number-resolving detectors: from coherent states discrimination to quantum cryptographic applications
	A. Allevi and <mark>M. Bondani</mark> Photon antibunching in the mesoscopic intensity domain
20 – 23 September 2016	9th Italian Quantum Information Science Conference 2016, Rome (Italy) A. Allevi, M. Caccia, M. Bina, S. Olivares and M. Bondani Photon-number-resolving detectors: an enabling technology for quantum information
11 - 15 July 2016	The twenty fifth annual International Laser Physics Workshop (LPHYS'16), Yerevan, (Armenia) M. Bondani, A. Allevi, R. Machulka, J. Peřina Jr., O. Haderka Spatial and spectral properties of parametric down-conversion in the high-intensity regime
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
26 - 30 May 2014	VII Workshop ``Advances in Foundations of Quantum Mechanics and Quantum Information with atoms and photons", Turin (Italy) A. Allevi, O. Jedrkiewicz, E. Brambilla, A. Gatti, J. Peřina Jr., O. Haderka, R. Machulka, and M. Bondani Spatial and spectral properties of twin-beam: from low to high intensity
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
26 - 28 September 2012	5th Italian Quantum Information Science Conference 2012, Padua (Italy) M. Bondani, A. Allevi, L. Nardo Measuring classical and non-classical correlations: from single-photons to high-intensity 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 High-order photon-number correlations: a resource for characterization and applications of quantum states
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
28 May – 1 June 2010	XIII International Conference on Quantum Optics and Quantum Information, ICQO'2010, Kyiv (Ucraina) A. Andreoni, A. Allevi, M. Bondani Conditional non-Gaussian states by multiple-photon subtraction
23 - 29 May 2010	V Workshop ``Advances in Foundations of Quantum Mechanics and Quantum Information with atoms and photons", Turin (Italy) M. Bondani, A. Allevi, and A. Andreoni, Non-Gaussian state generation from quantum- and classically-correlated pulsed fields
22 - 26 June 2009	 11th International Conference on Squeezed States and Uncertainty Relations – 4th Feynman Festival, Olomouc (Czech Republic) A. Andreoni, M. Bondani, A. Allevi Photon statistics in the macroscopic realm: methods to beat the lack of photon-counters
13 - 17 April 2009	SPIE, Defense, Security+Sensing, Orlando (Florida, USA) M. Bondani, A. Allevi, A. Andreoni Wigner function reconstruction by hybrid photodetectors in the linear regime
8 - 12 September 2008	16th Polish-Slovak-Czech Optical Conference on Wave and Quantum Aspects of Contemporary Optics, Polanica Zdrój (Poland)

	J. Peřina Jr., J. Peřina, O. Haderka, J. Křepelka, M. Hamar, V. Michálek, M. Bondani, A. Allevi, A. Andreoni Photocount measurements as a tool for investigation of nonclassical properties of twin beams
26 - 30 August 2007	SPIE Optics+Photonics, San Diego (California, USA) M. Bondani, A. Allevi, G. Zambra, M. G. A. Paris, A. Andreoni Sub-shot-noise intensity correlations in a mesoscopic twin-beam
2 - 5 May 2006	III Workshop ``Advances in Foundations of Quantum Mechanics and Quantum Information with atoms and photons", Turin (Italy) M. Bondani, A. Allevi, and A. Andreoni, Calculation of the 3D interaction geometry for two interlinked $\chi^{(2)}$ processes generating entangled triplets.

CONTRIBUTED TALKS

CONTRIBUTED TAENO	
1 - 5 July 2024	28th CEWQO 2024, Central European Workshop on Quantum Optics, Milan (Italy) 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 <mark>A. Allevi</mark> 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
30 September – 4 October 2019	Italian National Conference "FisMat 2019", Catania (Italy) A. Allevi, <mark>G. Chesi</mark> , and M. Bondani Measuring nonclassicality with silicon photomultipliers
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
04 – 06 April 2019	Osa Meeting, ``Quantum Information and Measurement: Quantum Technologies", Roma (Italia) S. Olivares, A. Allevi, M. G. A. Paris, and <mark>M. Bondani</mark> Quantum-State Tomography with Photon-Number-Resolving Homodyne Detection
17 – 20 September 2018	11th Italian Quantum Information Science Conference 2018, Catania (Italia) A. Allevi and M. Bondani Preserving nonclassicality in noisy communication channels

21 – 25 May 2018	CEWQO 2018, 25th Central European Workshop on Quantum Information, Palma de Mallorca, (Spagna) A. Allevi, S. Cassina, and M. Bondani Super-thermal photon-number statistics in second-harmonic generation
1 – 5 October 2017	FisMat 2017, Trieste (Italy) A. Allevi, M. Caccia G. Chesi, L. Malinverno, R. Santoro, and M. Bondani Exploring the quantum properties of mesoscopic optical states with photon-number- resolving detectors
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
22 – 25 May 2017	The 38th PIERS in St Petersburg, Russia A. Allevi, M. Bina, S. Olivares, and <mark>M. Bondani</mark> Hybrid homodyne-like detection scheme with photon-number-resolving detectors
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	CEWQO 2015, 22nd Central European Workshop on Quantum Information, Warsaw, (Poland) A. Allevi and M. Bondani Super-thermal photon-number statistics in second-harmonic generation
	A. Allevi, M. Bondani, R. Machulka, J. Peřina Jr. and O. Haderka Near-to-far-field evolution of twin beams
29 June – 2 July 2015	ETOP 2015/Education and Training in Optics and Photonics, Bordeaux (France) M. Bondani, A. Allevi, J. Soubusta and O. Haderka Joint International Physics Summer School Optics
13 - 16 April 2015	``SPIE Optics+Optoelectronics'', Prague (Czech Republic) M. Bondani, A. Allevi, M. Lamperti, R. Machulka, O. Jedrkiewicz, E. Brambilla, A. Gatti, J. Peřina Jr. and O. Haderka Effects of pump depletion on spatial and spectral properties of parametric down- conversion
	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
18 - 20 March 2014	Osa Meeting, ``Quantum Information and Measurement'', Berlin (Germany) 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
24 - 26 September 2013	6th Italian Quantum Information Science Conference 2013, Como (Italy) M. Lamperti, A. Allevi, 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
09 - 13 September 2013	Italian National Conference on Condensed Matter Physics, Milan (Italy) M. Bondani, A. Allevi, M. Lamperti, R. Machulka, V. Michálek, O. Haderka, and J. Peřina Jr.
	Poissonian light
	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) M. Lamperti, A. Allevi, M. Bondani, R. Machulka, V. Michálek, O. Haderka, and J. Peřina Jr. Efficient selection of mesoscopic twin-beam states for the optimal production of sub- Poissonian light
	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
	A. Allevi and <mark>M. Bondani</mark> Ghost imaging by intense multimode twin beam
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
	M. Bondani, A. Allevi, G. Zambra, M. G. A. Paris, A. Andreoni

Experimental demonstration of sub-shot-noise intensity correlations in an intense twinbeam.

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) <i>Phase-dependent correlations for quantum information</i>
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.

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 Department of Science and High Technology, University of Insubria, Como, Italy
- Prof. E. Brambilla Department of Science and High Technology, **University of Insubria**, Como, Italy
- Prof. M. Prest Department of Science and High Technology, **University of Insubria**, Como, Italy
- Dr. E. Vallazza
 INFN Sezione di Milano Bicocca, Milano, Italy
- Dr. O. Jedrkiewicz and Dr. A. Gatti IFN, CNR, Como, Italy

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

2021-2026: Unit Responsible (Insubria Unit) for the Project "Italian Quantum Weeks".

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

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)

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)

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).

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.

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).

MANAGEMENT EXPERIENCES

- 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)
- Local organizer of the "6th Italian Quantum Information Science Conference", held in Como (September 24 26, 2013)
- Local organizer of the Workshop "Officina di didattica e divulgazione della Fisica", held in Como (2013 today)
- Local organizer of the Joint International Physics Summer School Optics, devoted to high-school students and teachers (Como-Olomouc, 2013 - today)
- Local organizer of the "12th Italian Quantum Information Science Conference", held in Milan (September 9 -12, 2019)
- Representative of Physicists in the Orientation Committee of the University of Insubria (2016 2023)

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

TEACHING ACTIVITIES

Teacher at the University of Insubria

- 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 (teacher)
- 2021 2022 Quantum Optics for Quantum Information (teacher)
- 2020 today: Electromagnetism for Physicists (teacher)
- 2019 today: Optics Laboratory for Physicists (teacher)
- 2015 today: 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

- 2022 today: Tutor of a PhD student in Physics and Astrophysics (PNRR program)
- 2022 today: Scientific Responsible for an RTD-A position (D. M. 737/2021)
- 2022: Responsible for Insubria Unit within the Italian Quantum Weeks
- 2021 2022: 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
- 2017 2018: supervisor of a 1-year junior grant entitled ``Investigating the effect of noise sources in the freespace 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
- 2017 today: Member of 10 doctoral examination commissions (University of Insubria and other Italian universities)
- 2016 2020: Tutor of a PhD thesis in Physics and Astrophysics
- 2009 today: Tutor (9 times) and co-tutor (9 times) of bachelor and master theses in Physics
- 2015: Responsible for the internship of levgen 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.

OUTREACH

	Allevi Alessia is involved in several orientation and outreach activities devoted to secondary and 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	Alessia Allevi is involved in the activities of the European Researchers' Night at the University of Insubria
2011 - today	Alessia Allevi is 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	Alessia Allevi organizes and presents the experimental apparatuses realized for the stand of the University of Insubria at the annual event "YOUNG - Orienta il tuo futuro" held at Lariofiere of Erba (Co)
2009 – today	She collaborates in 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	She was 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.