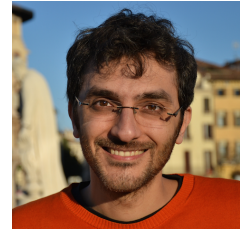

CURRICULUM VITAE
of
Giuseppe Vallone



Personal Information

Name and surname
Office address

Phone numbers
E-mail address
Nationality
Place and date of birth

Giuseppe Vallone

Department of Information Engineering, University of Padova, via G. Gradenigo 6/B, 35131 - Padova, Italy
+39 049 827 7549 (office)
vallone@dei.unipd.it
Italian
Vico Equense (Na), Italy, 03/08/1979

Present occupation

Full Professor since February 2024 at the University of Padova,
Department of Information Engineering, via G. Gradenigo 6/B, Padova.
Co-Funder and CTO of ThinkQuantum, spin-off of the University of Padova

Qualification

Date
Title
Institution
Subjects covered

01/11/2002-26/01/2006

Ph.D. in theoretical physics.

University of Torino, Theoretical Physics Department, via Pietro Giuria 1, Torino, Italy
String theory. Title of the thesis: "Nonperturbative aspects of gauge theory from strings" (supervisor Prof. A. Lerda).

Date
Title
Institution
Subjects covered

01/09/1998-12/07/2002

Degree in physics with marks 110/110 cum Laude and honors

University of Torino, Theoretical Physics Department, via Pietro Giuria 1, Torino, Italy
Theoretical Physics. The title of my thesis was "Gauge theory and noncommutative geometry" prepared under the supervision of Prof. Stefano Sciuto.

Awards

Award
Assigned by

Award
Assigned by

Award
Assigned by

Award
Assigned by

01/12/2003-31/10/2004: "Marie Curie training site" fellowship at NORDITA institute (Copenhagen)

European Commission.

"premio OPTIME 2002/03: riconoscimento al merito ai neolaureati che si sono maggiormente distinti negli studi."

Unione Industriale of Torino.

"Miglior tesi di laurea di ciascun corso di laurea (a.a. 2001/02)" (Best Degree thesis)

University of Torino.

"Premio Vito Volterra per giovani laureati in Fisica dopo il Maggio 2001"

Società Italiana di Fisica (S.I.F.) during the XCIV National Congress held in Genova, September 22-27, 2008.

1 Experiences and research activities

<i>Date</i>	01/02/2024-today:
<i>Position</i>	Full Professor at the University of Padova.
<i>Date</i>	01/05/2019-31/01/2024:
<i>Position</i>	Associate Professor at the University of Padova.
<i>Date</i>	01/05/2011-30/04/2019:
<i>Position</i>	Assistant Professor (Ricercatore) at the University of Padova.
<i>Activity from</i> 01/05/2011	Research focused in the field of quantum communication, with particular attention to free space photon propagation and quantum key distribution. I teach Electromagnetism in the second year of the Informatic Engineering course and <i>Quantum Information and computing</i> in the first year of the Master Degree in ICT for Internet and multimedia
<i>Date</i>	01/01/2009-30/04/2011:
<i>Employer</i>	“Centro di Studi e Ricerche Enrico Fermi”, Via Panisperna 89, Roma.
<i>Position</i>	Junior Grant with research at the Physics Department of Sapienza - University of Roma
<i>Date</i>	01/01/2007-31/12/2008:
<i>Employer</i>	University “Sapienza” of Rome, piazzale Aldo Moro 5, Rome, Italy.
<i>Position</i>	Post-doc fellowship at the Physics Department of the University
<i>Activities</i>	Since January 2006 I worked with Francesco De Martini and Paolo Mataloni in the experimental Quantum Optic Group of the Sapienza University.
<i>Date</i>	01/11/2005-31/10/2006
<i>Employer</i>	Theoretical Physics Department of the University of Torino, via Pietro Giuria, 1 - 10125 Torino, Italy.
<i>Position</i>	“Assegnista di ricerca in fisica” (post-doc research grant)
<i>Activities</i>	I worked with the String Theory Group of Torino and with the Quantum Optic Group of Francesco De Martini and Paolo Mataloni in the University “Sapienza” of Rome.
<i>Date</i>	01/11/2002-31/10/2005
<i>Employer</i>	Theoretical Physics Department of the University of Torino, via Pietro Giuria, 1 - 10125 Torino, Italy.
<i>Position</i>	Graduate student in Theoretical Physics at the University of Torino (XVIII ciclo).
<i>Activities</i>	I studied and researched in the field of string theory. Courses attended: Phenomenology of standard model I and II; Nonperturbative quantum field theory; Q.F.T. at finite temperature; Statistical field theory; Supersymmetry. I worked with Prof. M. Billò, M. Frau, A. Lerda and S. Sciuto on the stringy description of instantons in noncommutative Yang-Mills theory, realized with $D3/D(-1)$ brane systems in a $B_{\mu\nu}$ background [2].
<i>Date</i>	01/12/2003-31/10/2004
<i>Position</i>	“Marie Curie training site” fellowship at NORDITA institute (Copenhagen).
<i>Activities</i>	I worked under the supervision of Prof. Paolo Di Vecchia and I studied supergravity solutions dual to gauge theories in the framework of gauge/gravity correspondence, with special attention to the orbifold $\mathbb{C}^3/\mathbb{Z}_2 \times \mathbb{Z}_2$ and the conifold. I also worked with my colleagues, P. Merlatti, F. Sannino and F. Vian, on the generalized Veneziano-Yankelovicz potential with the inclusion of the glueball superfield and the meson superfield. In particular we investigated the classic solutions (domain walls) of this theory [1].

Other activities

- **March-May:** I took part to the course “Teaching and Communicating in English”, organized by the Language Center of the University of Padova within the project (Learning English for Academic Purposes)
- **20-22 January 2014:** I took part to the course “Sicurezza Laser per TSL” (Laser Safety), held by Ing. Dante Milani and by Prof. Alessandra Tomaselli.
I passed the final test that certifies my knowledge in the Italian laws on laser safety: IEC EN 60825-1, IEC EN 60825-4, IEC TR 60825-14, EN 207, EN 208.

2 Scientific activity

Summary of my scientific activity

My main findings are the first satellite quantum communication experiment, the first quantum key distribution (QKD) in the free space outside a laboratory that exploits the orbital angular momentum of light, the first quantum random number generators (QRNGs) using the uncertainty principle, the first proposal for a direct measurement of the quantum wave function with strong measurements, the first quantum experiment with a laser-written glass circuit. During my PhD in theoretical physics, I published two articles on the applications of string theory. After my PhD, I started working in the field of quantum information. All my publications after my PhD are in this area.

My research is focused in the generation and manipulation of quantum states, with particular attention to hyperentangled two-photon states, i.e. entangled in more than one degree of freedom. Those states represent an important resource in quantum computation and communication applications and are generated by the so called Spontaneous Parametric Down Conversion (SPDC).

In particular I studied:

- non-locality experiments with hyperentangled states. With hyperentangled states an higher violation of Bell inequalities with respect to simple entangled states with one degree of freedom can be obtained.
- complete and deterministic discrimination of polarization Bell states through hyperentangled states;
- generation of polarization qutrit states from non maximally entangled states;
- generation of two-photon four-qubit linear cluster states. Those states are very important in the one-way model of quantum computation;
- time-bin entanglement of two photon realized with a new interferometric scheme that allows the generation of the entanglement without temporal post-selection ;
- generation of 6-qubit hyperentangled states and witness methods for entanglement detection ;
- creation of two photons entangled in many optical path (multi-path entanglement) by an integrated device built with single mode fibers and GRaded INdex lens;
- 6-qubit two-photon cluster state generation. These states were used for nonlocality test and the realization of quantum algorithms in the one-way model;
- Use of a laser written waveguide in glass to manipulate the polarization of entangled photons. These waveguide represent an important step towards the miniaturization of quantum information processes based on the photon polarization;
- Realization of a 2-photon 4-qubit Dicke state and study of its decoherence;
- Study of the role of the post-selection in nonlocality experiments;
- Realization of the first integrated CNOT working on polarization qubit and the first integrated quantum walk of two polarization entangled photons ;
- Proposal of a device-independent QKD protocol based on nonmaximally entangled states.
- Long-distance quantum communication in free space and towards satellite, and fundamental physics experiments on spatial channels .
- Development of new devices and algorithm for quantum key distribution
- Quantum key distribution with multi-core fibers-core.
- Generation of random number from quantum processes.
- Optical modes with orbital angular momentum for quantum communication.
- Generation of entangled states, study of their properties and applications.
- Protocols exploiting weak measures and their generalization.
- Demonstration of the first time-bin entanglement without post-selection loophole
- HOM effect with two independent integrated lasers
- Properties of multimodal Gaussian states
- Quantum interference in curved spacetime

2.1 Publications

I'm the author of 3 patents and I published 140 papers, including 116 papers on peer-review journals, 1 book chapter and 27 proceedings.

The total number of citations and the h-index are indicated in the following table:

Number of citations	h-index	Source
8644	46	Google Scholar (User: cO7xhnMAAAAJ)
5899	41	Scopus (AuthorID=16302683300)
5212	36	ISI Web Of Science (Resercher ID: H-7579-2012)

Preprints

- [IX] C. Agnesi, M. Giacomini, D. Sartorato, S. Artuso, **G. Vallone**, P. Villoresi, *In-Field Comparison between G.652 and G.655 Optical Fibers for Polarization-Based Quantum Key Distribution*, [arXiv:2312.04203].
- [VIII] D. Scalcon, E. Bazzani, **G. Vallone**, P. Villoresi, M. Avesani, *Low-error encoder for time-bin and decoy states for quantum key distribution*, [arXiv:2311.02059].
- [VII] F. Picciariello, I. Karakosta-Amarantidou, E. Rossi, M. Avesani, G. Foletto, L. Calderaro, **G. Vallone**, P. Villoresi, F. Vedovato, *Intermodal quantum key distribution field trial with active switching between fiber and free-space channels*, [arXiv:cy].
- [VI] M. Padovan, G. Foletto, L. Coccia, M. Avesani, P. Villoresi, **G. Vallone**, *Geometry of sequential quantum correlations and robust randomness certification*, [arXiv:2309.12286].
- [V] E. Bazzani, A. V. Guglielmi, R. Corvaja, N. Laurenti, F. Romanato, G. Ruffato, A. Vogliardi, F. Vedovato, **G. Vallone**, L. Vangelista, P. Villoresi, *The Tree of Light as interstellar optical transmitter system*, [arXiv:2308.01900].
- [IV] T. Bertapelle, M. Avesani, A. Santamato, A. Montanaro, M. Chiesa, D. Rotta, M. Artiglia, V. Soriano, F. Testa, G. De Angelis, G. Contestabile, **G. Vallone**, M. Romagnoli, P. Villoresi, *High-speed Source-Device-Independent Quantum Random Number Generator on a chip*, [arXiv:2305.12472].
- [III] F. B. L. Santagiustina, C. Agnesi, A. Alarcón, A. Cabello, G. B. Xavier, P. Villoresi, **G. Vallone**, *Certification of genuine time-bin and energy-time entanglement with integrated photonics*, [arXiv:2302.06522].
- [II] P. Magnani, M. Schiavon, A. R. H. Smith, D. R. Terno, **G. Vallone**, F. Vedovato, P. Villoresi, S. Vinjanampathy, *Quantum satellites and tests of relativity*, [arXiv:1906.04415].
- [I] **G. Vallone**, D. Dequal, *Reply to "Comment on 'Strong Measurements Give a Better Direct Measurement of the Quantum Wave Function'"*, [arXiv:1711.02055].

Articles on peer-reviewed journals

- [120] E. Figueroa, S. Gera, C. Wallace, M. Flament, A. Scriminich, M. Namazi, Y. Kim, S. Sagona-Stopfel, **G. Vallone**, P. Villoresi, *Hong-Ou-Mandel interference of single-photon-level pulses stored in independent room-temperature quantum memories*, **npj Quantum Information** **10**, **10** (2024). Preprint at [arXiv:1808.07015].
- [119] F. Picciariello, F. Vedovato, D. Orsucci, P. N. Dominguez, T. Zechel, M. Avesani, M. Padovan, G. Foletto, L. Calderaro, D. Dequal, A. Shrestha, L. Blumel, J. Furthner, **G. Vallone**, P. Villoresi, T. D. Schmidt, F. Moll, *Quantum-secured time transfer between precise timing facilities: a field trial with simulated satellite links*, **GPS solutions** **28**, **48** (2024). Preprint at [arXiv:2305.01554].
- [118] Weichao Liang, Francesco Ticozzi, **G. Vallone**, *Optimizing measurements sequences for quantum state verification*, **Quantum Information Processing** **22**, **419** (2023). Preprint at [arXiv:2307.00881].
- [117] D. R. Terno, F. Vedovato, M. Schiavon, A. R. H. Smith, P. Magnani, **G. Vallone**, P. Villoresi, *Proposal for an optical interferometric measurement of the gravitational redshift with satellite systems*, **Physical Review D** **108**, **084063** (2023). Preprint at [arXiv:1811.04835].
- [116] Federico Berra, Costantino Agnesi, Andrea Stanco, Marco Avesani, Michal Kuklewski, Daniel Matter, Paolo Villoresi, **G. Vallone**, *Synchronization of quantum communication over an optical classical communication channel*, **Applied Optics** **62**, **7994** (2023). Preprint at [arXiv:2306.17603].
- [115] F. Berra, C. Agnesi, A. Stanco, M. Avesani, S. Cocchi, P. Villoresi, **G. Vallone**, *Modular source for near-infrared quantum communication*, **EPJ Quantum Technology** **10**, **27** (2023). Preprint at [arXiv:2301.12882].
- [114] L. Coccia, A. Santamato, **G. Vallone**, P. Villoresi, *Optimal focusing conditions for bright SPDC sources*, **Physical Review A** **107**, **063712** (2023). Preprint at [arXiv:2302.01118].
- [113] G. Tavani, C. Barri, E. Mafakheri, G. Franzò, M. Celebrano, M. Castriotta, M. Di Giancamillo, G. Ferrari, F. Picciariello, G. Foletto, C. Agnesi, **G. Vallone**, P. Villoresi, V. Soriano, D. Rotta, M. Finazzi, M. Bollani, E.

Prati,

Fully Integrated Silicon Photonic Erbium-Doped Nanodiode for Few Photon Emission at Telecom Wavelengths,
Materials **16**, 2344 (2023).

- [112] M. Avesani, H. Tebyanian, P. Villoresi, **G. Vallone**,
Unbounded randomness from uncharacterized sources,
Communications Physics **5**, 273 (2022). Preprint at [arXiv:2010.05798].
- [111] D. Scalcon, C. Agnesi, M. Avesani, L. Calderaro, G. Foletto, A. Stanco, **G. Vallone**, P. Villoresi,
Cross-encoded quantum key distribution exploiting time-bin and polarization states with qubit-based synchronization,
Advanced Quantum Technologies **2200051** (2022). Preprint at [arXiv:2111.13383].
- [110] M. Mohageg, L. Mazzarella, D. V. Strekalov, N. Yu, A. Zhai, S. Johnson, C. Anastopoulos, J. Gallicchio, B. L. Hu, T. Jennewein, S.-Y. Lin, A. Ling, C. Marquardt, M. Meister, A. Roura, L. Wörner, W. P. Schleich, R. Newell, C. Schubert, **G. Vallone**, P. Villoresi, P. Kwiat,
The Deep Space Quantum Link: Prospective Fundamental Physics Experiments using Long-Baseline Quantum Optics,
EPJ Quantum Technology **9**, 25 (2022). Preprint at [arXiv:2111.15591].
- [109] A. Scriminich, G. Foletto, F. Picciariello, **G. Vallone**, P. Villoresi, F. Vedovato,
Optimal design and performance evaluation of free-space Quantum Key Distribution systems,
Quantum Science and Technology **7**, 045029 (2022). Preprint at [arXiv:2109.13886].
- [108] A. Stanco, F. B. L. Santagiustina, L. Calderaro, M. Avesani, T. Bertapelle, D. Dequal, **G. Vallone**, P. Villoresi,
Versatile and concurrent FPGA-based architecture for practical quantum communication systems,
IEEE Transactions on Quantum Engineering **3**, 1 (2022). Preprint at [arXiv:2107.01857].
- [107] G. Foletto, F. Picciariello, C. Agnesi, P. Villoresi, **G. Vallone**,
Security bounds for decoy-state QKD with arbitrary photon-number statistics,
Physical Review A **105**, 012603 (2022). Preprint at [arXiv:2109.13830].
- [106] H. Tebyanian, M. Avesani, **G. Vallone**, P. Villoresi,
Semi-device independent randomness from d -outcome continuous-variable detection,
Physical Review A **104**, 062424 (2021). Preprint at [arXiv:2009.08897].
- [105] M. Avesani, G. Foletto, M. Padovan, L. Calderaro, C. Agnesi, E. Bazzani, F. Berra, T. Bertapelle, F. Picciariello, F. B.L. Santagiustina, D. Scalcon, A. Scriminich, A. Stanco, F. Vedovato, **G. Vallone**, P. Villoresi,
Deployment-ready quantum key distribution over a classical network infrastructure in Padua,
Journal of Lightwave Technology **40**, 1658 (2022). Preprint at [arXiv:2109.13558].
- [104] H. Tebyanian, M. Zahidy, M. Avesani, A. Stanco, P. Villoresi, **G. Vallone**,
Semi-device independent randomness generation based on quantum state's indistinguishability,
Quantum Science and Technology **6**, 045026 (2021).
- [103] A. Stanco, D. G. Marangon, **G. Vallone**, S. Burri, E. Charbon, P. Villoresi,
Certification of the efficient random number generation technique based on single-photon detector arrays and time-to-digital converters,
IET Quantum Communication **2**, 74 (2021).
- [102] J. Sidhu, S. Joshi, M. Gundogan, T. Brougham, D. Lowndes, L. Mazzarella, M. Krutzik, S. Mohapatra, D. Dequal, **G. Vallone**, P. Villoresi, A. Ling, T. Jennewein, M. Mohageg, J. Rarity, I. Fuentes, S. Pirandola, D. Oi,
Advances in Space Quantum Communications,
IET Quantum Communication **2**, 182 (2021). Preprint at [arXiv:2103.12749].
- [101] M. Avesani, L. Calderaro, G. Foletto, C. Agnesi, F. Picciariello, F. Santagiustina, A. Scriminich, A. Stanco, F. Vedovato, M. Zahidy, **G. Vallone**, P. Villoresi,
Resource-effective Quantum Key Distribution: a field-trial in Padua city center,
Optics Letters **46**, 2848 (2021). Preprint at [arXiv:2012.08457].
- [100] M. Avesani, L. Calderaro, M. Schiavon, A. Stanco, C. Agnesi, A. Santamato, M. Zahidy, A. Scriminich, G. Foletto, G. Contestabile, M. Chiesa, D. Rotta, M. Artiglia, A. Montanaro, M. Romagnoli, V. Soriano, F.

- Vedovato, **G. Vallone**, P. Villoresi,
Full daylight quantum-key-distribution at 1550 nm enabled by integrated silicon photonics,
npj Quantum Information **7**, **93** (2021). Preprint at [arXiv:1907.10039].
- [99] G. Foletto, M. Padovan, M. Avesani, H. Tebyanian, P. Villoresi, **G. Vallone**,
Experimental Test of Sequential Weak Measurements for Certified Quantum Randomness Extraction,
Physical Review A **103**, **062206** (2021). Preprint at [arXiv:2101.12074].
- [98] M. Avesani, H. Tebyanian, P. Villoresi, **G. Vallone**,
Semi-Device-Independent Heterodyne-based Quantum Random Number Generator,
Physical Review Applied **15**, **034034** (2021). Preprint at [arXiv:2004.08344].
- [97] D. Dequal, C. Agnesi, D. Sarrocco, L. Calderaro, L. S. Amato, M. Siciliani de Cumis, **G. Vallone**, P. Villoresi,
V. Luceri, G. Bianco,
100 kHz satellite laser ranging demonstration at Matera Laser Ranging Observatory,
Journal of Geodesy **95**, **26** (2021).
- [96] D. Dequal, L. Trigo Vidarte, V. Roman Rodriguez, **G. Vallone**, P. Villoresi, A. Leverrier, E. Diamanti,
Feasibility of satellite-to-ground continuous-variable quantum key distribution,
npj Quantum Information **7**, **3** (2021). Preprint at [arXiv:2002.02002].
- [95] S. Pirandola, U. Andersen, L. Banchi, M. Berta, D. Bunandar, R. Colbeck, D. Englund, T. Gehring, C. Lupo, C. Ottaviani, J. Pereira, M. Razavi, J. S. Shaari, M. Tomamichel, V. Usenko, **G. Vallone**, P. Villoresi, P. Wallden,
Advances in Quantum Cryptography,
Advances in Optics and Photonics **12**, **1012** (2020). Preprint at [arXiv:1906.01645].
- [94] M. Avesani, C. Agnesi, A. Stanco, **G. Vallone**, P. Villoresi,
Stable, low-error and calibration-free polarization encoder for free-space quantum communication,
Optics Letters **45**, **4706** (2020). Preprint at [arXiv:2004.11877].
- [93] G. Foletto, L. Calderaro, **G. Vallone**, P. Villoresi,
Experimental Demonstration of Sequential Quantum Random Access Codes,
Physical Review Research **2**, **033205** (2020). Preprint at [arXiv:2001.04885].
- [92] A. Stanco, D. G. Marangon, **G. Vallone**, S. Burri, E. Charbon, P. Villoresi,
Efficient random number generation techniques for CMOS single-photon avalanche diode array exploiting fast time tagging units,
Physical Review Research **2**, **023287** (2020). Preprint at [arXiv:1910.05232].
- [91] D. R. Terno, **G. Vallone**, F. Vedovato, P. Villoresi,
Large-scale optical interferometry in general spacetimes,
Physical Review D **101**, **104052** (2020). Preprint at [arXiv:1911.05156].
- [90] L. Calderaro, A. Stanco, C. Agnesi, M. Avesani, D. Dequal, P. Villoresi, **G. Vallone**,
Fast and simple qubit-based synchronization for quantum key distribution,
Physical Review Applied **13**, **054041** (2020). Preprint at [arXiv:1909.12050].
- [89] F. Sansone, A. Francesconi, R. Corvaja, **G. Vallone**, R. Antonello, F. Branz, Paolo Villoresi,
LaserCube Optical Communication Terminal for Nano and Micro Satellites,
Acta Astronautica **173**, **310** (2020).
- [88] G. Foletto, L. Calderaro, A. Tavakoli, M. Schiavon, F. Picciariello, A. Cabello, P. Villoresi and **G. Vallone**,
Experimental Certification of Sustained Entanglement and Nonlocality after Sequential Measurements,
Physical Review Applied **13**, **044008** (2020). Preprint at [arXiv:1906.07412].
- [87] C. Agnesi, M. Avesani, L. Calderaro, A. Stanco, G. Foletto, M. Zahidy, A. Scriminich, F. Vedovato, **G. Vallone**,
P. Villoresi,
Simple Quantum Key Distribution with qubit-based synchronization and a self-compensating polarization encoder,
Optica **7**, **284** (2020). Preprint at [arXiv:1909.12703].
- [86] G. M. Tino, *et al.*,

- SAGE: A Proposal for a Space Atomic Gravity Explorer*,
European Physical Journal D 73, 228 (2019). Preprint at [arXiv:1907.03867].
- [85] M. Thibault, J. Y. Haw, D. G. Marangon, O. Thearle, **G. Vallone**, P. Villoresi, P. K. Lam, S. M. Assad, *Real-Time Source Independent Quantum Random Number Generator with Squeezed States*, **Physical Review Applied 12, 034017 (2019)**.
- [84] C. Agnesi, M. Avesani, A. Stanco, P. Villoresi, **G. Vallone**, *All-fiber self-compensating polarization encoder for Quantum Key Distribution*, **Optics Letters 44, 2398 (2019)**.
- [83] **G. Vallone**, G. Cariolaro, and G. Pierobon, *Means and covariances of photon numbers in multimode Gaussian states*, **Physical Review A 99, 023817 (2019)**.
- [82] C. Agnesi, L. Calderaro, D. Dequal, F. Vedovato, M. Schiavon, A. Santamato, V. Luceri, G. Bianco, **G. Vallone**, P. Villoresi, *Sub-ns timing accuracy for satellite quantum communications*, **Journal of the Optical Society of America B (JOSAB) 36, B59 (2019)**.
- [81] C. Agnesi, B. Da Lio, D. Cozzolino, L. Cardi, B. Ben Bakir, K. Hassan, A. Della Frera, A. Ruggeri, A. Giudice, **G. Vallone**, P. Villoresi, A. Tosi, K. Rottwitt, Y. Ding, and D. Bacco, *Hong–Ou–Mandel interference between independent III–V on silicon waveguide integrated lasers*, **Optics Letters 44, 271 (2019)**.
- [80] L. Calderaro, C. Agnesi, D. Dequal, F. Vedovato, M. Schiavon, A. Santamato, V. Luceri, G. Bianco, **G. Vallone**, P. Villoresi, *Towards Quantum Communication from Global Navigation Satellite System*, **Quantum Science and Technology 4, 015012 (2019)**.
- [79] M. Avesani, D. G. Marangon, **G. Vallone**, P. Villoresi, *Source-device-independent heterodyne-based quantum random number generator at 17 Gbps*, **Nature Communications 9, 5365 (2018)**.
- [78] L. Calderaro, G. Foletto, D. Dequal, P. Villoresi, **G. Vallone**, *Direct reconstruction of the quantum density matrix by strong measurements*, **Physical Review Letters 121, 230501 (2018)**.
- [77] F. Vedovato, C. Agnesi, M. Tomasin, M. Avesani, J.-Å. Larsson, **G. Vallone**, P. Villoresi, *Post-selection-loophole-free Bell violation with genuine time-bin entanglement*, **Physical Review Letters 121, 190401 (2018)**.
- [76] F. Mousavi, **G. Vallone**, P. Villoresi, R. Nouroozi, *Generation of mutually unbiased bases for 4D-QKD with structured photons via LNOI photonic wire*, **Journal of Optics 20, 095802 (2018)**.
- [75] C. Agnesi, F. Vedovato, M. Schiavon, D. Dequal, L. Calderaro, M. Tomasin, D. G. Marangon, A. Stanco, V. Luceri, G. Bianco, **G. Vallone** and P. Villoresi, *Exploring the boundaries of quantum mechanics: advances in satellite quantum communications*, **Phil. Trans. R. Soc. A 376, 20170461 (2018)**.
- [74] M. Namazi, **G. Vallone**, B. Jordaan, C. Goham, R. Shahrokhshahi, P. Villoresi, E. Figueroa, *Free space quantum communication with a portable quantum memory*, **Physical Review Applied 8, 064013 (2017)**.
- [73] F. Vedovato, C. Agnesi, M. Schiavon, D. Dequal, L. Calderaro, M. Tomasin, D. G. Marangon, A. Stanco, V. Luceri, G. Bianco, **G. Vallone**, P. Villoresi, *Extending Wheeler’s delayed-choice experiment to Space*, **Science Advances 3, e1701180 (2017)**.
- [72] G. Cañas, N. Vera, J. Cariñe, P. González, J. Cardenas, P. W. R. Connolly, A. Przysieszna, E. S. Gómez, M.

- Figueroa, **G. Vallone**, P. Villoresi, T. Ferreira da Silva, G. B. Xavier, G. Lima, *High-dimensional decoy-state quantum key distribution over 0.3 km of multicore telecommunication optical fibers*, **Physical Review A** **96**, 022317 (2017).
- [71] S. F. Mousavi, R. Nouroozi, **G. Vallone**, P. Villoresi, *Integrated optical modulator manipulating the polarization and rotation handedness of Orbital Angular Momentum states*, **Scientific Reports** **7**, 3835 (2017).
- [70] D. K. Oi, A. Ling, **G. Vallone**, P. Villoresi, S. Greenland, E. Kerr, M. Macdonald, H. Weinfurter, H. Kuiper, E. Charbon, R. Ursin, *CubeSat quantum communications mission*, **EPJ Quantum Technology** **4**, 6 (2017).
- [69] M. Schiavon, L. Calderaro, M. Pittaluga, **G. Vallone**, P. Villoresi, *Three-observer Bell inequality violation on a two-qubit entangled state*, **Quantum Science and Technology** **2**, 015010 (2017). Preprint at [arXiv:1611.02430].
- [68] M. Tomasin, E. Mantoan, J. Jogenfors, **G. Vallone**, J.-Å. Larsson, P. Villoresi, *High-Visibility Time-Bin Entanglement for Testing Chained Bell Inequalities*, **Physical Review A** **95**, 032107 (2017). Preprint at [arXiv:1612.03602].
- [67] **G. Vallone**, *Role of beam waist in Laguerre-Gauss expansion of vortex beam*, **Optics Letters** **42**, 1097 (2017). Preprint at [arXiv:1611.06711].
- [66] D. G. Marangon, **G. Vallone**, P. Villoresi, *Source-device-independent Ultra-fast Quantum Random Number Generation*, **Physical Review Letters** **118**, 060503 (2017). Preprint at [arXiv:1509.07390].
- [65] D. G. Marangon, **G. Vallone**, U. Zanforlin, P. Villoresi, *Enhanced security for multi-detector Quantum Random Number Generators*, **Quantum Science and Technology** **1**, 015005 (2016). Preprint at [arXiv:1605.04808].
- [64] **G. Vallone**, G. Parisi, F. Spinello, E. Mari, F. Tamburini, P. Villoresi, *General theorem on the divergence of vortex beams*, **Physical Review A** **94**, 023802 (2016). Preprint at [arXiv:1601.02350].
- [63] M. Schiavon, **G. Vallone**, P. Villoresi, *Experimental realization of equiangular three-state quantum key distribution*, **Scientific Reports** **6**, 30089 (2016). Preprint at [arXiv:1603.07605].
- [62] **G. Vallone**, G. Di Giuseppe, P. Mataloni, P. Villoresi, and M. Lucamarini, *Reply to "Comment on 'Device-independent entanglement-based Bennett 1992 protocol' "*, **Physical Review A** **93**, 066304 (2016).
- [61] **G. Vallone**, A. Sponselli, V. D'Ambrosio, L. Marrucci, F. Sciarrino, P. Villoresi, *Birth and evolution of an optical vortex*, **Optics Express** **24**, 16390 (2016). Preprint at [arXiv:1604.01018].
- [60] **G. Vallone**, D. Dequal, M. Tomasin, F. Vedovato, M. Schiavon, V. Luceri, G. Bianco, P. Villoresi, *Interference at the Single Photon Level Along Satellite-Ground Channels*, **Physical Review Letters** **116**, 253601 (2016).
- [59] H. Endo, M. Fujiwara, M. Kitamura, T. Ito, M. Toyoshima, Y. Takayama, H. Takenaka, R. Shimizu, N. Laurenti, **G. Vallone**, P. Villoresi, T. Aoki, M. Sasaki, *Free-space optical channel estimation for physical layer security*, **Optics Express** **24**, 8940 (2016).
- [58] **G. Vallone**, D. Dequal, *Strong Measurements Give a Better Direct Measurement of the Quantum Wave Function*,

Physical Review Letters 116, 040502 (2016).

- [57] M. Schiavon, **G. Vallone**, F. Ticozzi, P. Villoresi, *Heralded single photon sources for QKD applications*, **Physical Review A 93, 012331 (2016).**
- [56] D. Dequal, **G. Vallone**, D. Bacco, S. Gaiarin, V. Luceri, G. Bianco, P. Villoresi, *Experimental single photon exchange along a space link of 7000 km*, **Physical Review A 93, 010301(R) (2016), Rapid communications.**
- [55] **G. Vallone**, D. Bacco, D. Dequal, S. Gaiarin, V. Luceri, G. Bianco, P. Villoresi, *Experimental Satellite Quantum Communications*, **Physical Review Letters 115, 040502 (2015), Editors' Suggestion.**
- [54] **G. Vallone**, *On the properties of circular beams: normalization, Laguerre-Gauss expansion, and free-space divergence*, **Optics Letters 40, 1717 (2015).**
- [53] **G. Vallone**, D. Marangon, M. Canale, I. Savorgnan, D. Bacco, M. Barbieri, S. Calimani, C. Barbieri, N. Laurenti, P. Villoresi, *Adaptive real time selection for quantum key distribution in lossy and turbulent free-space channels*, **Physical Review A 91, 042320 (2015).**
- [52] **G. Vallone**, D. Marangon, M. Tomasin, P. Villoresi, *Quantum randomness certified by the uncertainty principle*, **Physical Review A 90, 052327 (2014).**
- [51] **G. Vallone**, V. D'Ambrosio, A. Sponselli, S. Slussarenko, L. Marrucci, F. Sciarrino, P. Villoresi, *Free-space quantum key distribution by rotation-invariant twisted photons*, **Physical Review Letters 111, 060503 (2014), Editors' Suggestion.**
- [50] **G. Vallone**, A. Dall'Arche, M. Tomasin, P. Villoresi, *Loss tolerant device-independent quantum key distribution: a proof of principle*, **New Journal of Physics 16, 063064 (2014).**
- [49] D. G. Marangon, **G. Vallone**, P. Villoresi, *Random bits, true and unbiased, from atmospheric turbulence*, **Scientific Reports 4, 5490 (2014).**
- [48] **G. Vallone**, G. Lima, E.S. Gómez, G. Cañas, J.-Å. Larsson, P. Mataloni, A. Cabello, *Bell scenarios in which nonlocality and entanglement are inversely related*, **Physical Review A 89, 012102 (2014).**
- [47] D. Bacco, M. Canale, N. Laurenti, **G. Vallone**, P. Villoresi, *Experimental quantum key distribution with finite-key security analysis for noisy channels*, **Nature Communications 4, 2363 (2013).**
- [46] L. Mazarella, F. Ticozzi, A. V. Sergienko, **G. Vallone**, P. Villoresi, *Asymmetric architecture for heralded single-photon sources*, **Physical Review A 88, 023848 (2013).**
- [45] **G. Vallone**, *Einstein-Podolsky-Rosen steering: Closing the detection loophole with non-maximally-entangled states and arbitrary low efficiency*, **Physical Review A 87, 020101(R) (2013), Rapid communications.**
- [44] M. Minozzi, S. Bonora, A. V. Sergienko, **G. Vallone**, P. Villoresi, *Optimization of two-photon wave function in parametric down conversion by adaptive optics control of the pump radiation*, **Optics Letters 38, 489 (2013).**

- [43] I. Capraro, A. Tomaello, A. Dall'Arche, F. Gerlin, R. Ursin, **G. Vallone**, P. Villoresi, *Impact of turbulence in long range quantum and classical communications*, **Physical Review Letters** **109**, 200502 (2012).
- [42] A. Chiuri, C. Greganti, M. Paternostro, **G. Vallone**, P. Mataloni, *Experimental Quantum Networking Protocols via Four-Qubit Hyperentangled Dicke States*, **Physical Review Letters** **109**, 173604 (2012).
- [41] M. Lucamarini, **G. Vallone**, I. Gianani, G. Di Giuseppe, P. Mataloni, *Device-independent entanglement-based Bennett 1992 protocol*, **Physical Review A** **85**, 032325 (2012).
- [40] L. Aolita, R. Gallego, A. Acín, A. Chiuri, **G. Vallone**, P. Mataloni, A. Cabello, *Fully nonlocal quantum correlations*, **Physical Review A** **85**, 032107 (2012). [arXiv:1105.3598].
- [39] L. Sansoni, F. Sciarrino, **G. Vallone**, P. Mataloni, A. Crespi, R. Ramponi, and R. Osellame, *Two-Particle Bosonic-Fermionic Quantum Walk via Integrated Photonics*, **Physical Review Letters** **108**, 010502 (2012), *Editors' Suggestion*.
- [38] A. Chiuri, V. Rosati, **G. Vallone**, S. Pádua, H. Imai, S. Giacomini, C. Macchiavello, P. Mataloni, *Experimental Realization of Optimal Noise Estimation for a General Pauli Channel*, **Physical Review Letters** **107**, 253602 (2011).
- [37] 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*, **European Physical Journal-Special Topics** **199**, 111 (2011).
- [36] A. Crespi, R. Ramponi, R. Osellame, L. Sansoni, I. Bongioanni, F. Sciarrino, **G. Vallone**, P. Mataloni, *Integrated photonic quantum gates for polarization qubits*, **Nature Communications** **2**, 566 (2011).
- [35] A. Chiuri, **G. Vallone**, M. Paternostro, and P. Mataloni, *Extremal quantum correlations: Experimental study with two-qubit states*, **Physical Review A** **84**, 020304(R) (2011), *Rapid communications*.
- [34] **G. Vallone**, I. Gianani, E. B. Inostroza, C. Saavedra, G. Lima, A. Cabello, P. Mataloni, *Testing Hardy nonlocality proof with genuine energy-time entanglement*, **Physical Review A** **83**, 042105 (2011).
- [33] H. Wunderlich, **G. Vallone**, P. Mataloni, M. B. Plenio, *Optimal verification of entanglement in a photonic cluster state experiment*, **New Journal of Physics** **13**, 033033 (2011).
- [32] F. Sciarrino, **G. Vallone**, A. Cabello, P. Mataloni, *Bell Experiments with Random Destination Sources*, **Physical Review A** **83**, 032112 (2011).
- [31] A. Chiuri, **G. Vallone**, N. Bruno, C. Macchiavello, D. Bruß, P. Mataloni, *Hyperentangled mixed phased Dicke states: optical design and detection*, **Physical Review Letters** **105**, 250501 (2010).
- [30] L. Sansoni, F. Sciarrino, **G. Vallone**, P. Mataloni, A. Crespi, R. Ramponi, R. Osellame, *Polarization entangled state measurement on a chip*, **Physical Review Letters** **105**, 200503 (2010), *Editors' Suggestion*.
- [29] I. Bongioanni, L. Sansoni, F. Sciarrino, **G. Vallone**, P. Mataloni, *Experimental quantum process tomography of non trace-preserving maps*, **Physical Review A** **82**, 042307 (2010).

- [28] **G. Vallone**, G. Donati, N. Bruno, A. Chiuri, P. Mataloni, *Experimental Realization of the Deutsch-Jozsa Algorithm with a Six-Qubit Cluster State*, **Physical Review A** **81**, 050302(R) (2010), *Rapid communications*.
- [27] C. Bonato, S. Bonora, A. Chiuri, P. Mataloni, G. Milani, **G. Vallone**, P. Villoresi, *Phase control of a longitudinal momentum entangled photon state by a deformable membrane mirror*, **Journal of the Optical Society of America B (JOSAB)** **27**, A175 (2010).
- [26] **G. Vallone**, G. Donati, R. Ceccarelli, P. Mataloni, *Six-qubit two-photon hyperentangled cluster states: characterization and application to quantum computation*, **Physical Review A** **81**, 052301 (2010).
- [25] G. Lima, **G. Vallone**, A. Chiuri, A. Cabello, P. Mataloni, *Experimental Bell inequality violation without the postselection loophole*, **Physical Review A** **81**, 040101(R) (2010), *Rapid communications*.
- [24] **G. Vallone**, P. Mataloni, A. Cabello, *Multiparty multilevel energy-time entanglement*, **Physical Review A** **81**, 032105 (2010).
- [23] **G. Vallone**, F. De Martini, P. Mataloni, *Quantum Algorithms in One-way Quantum Computation*, **Optics and Spectroscopy** **108**(2), 282 (2010).
- [22] **G. Vallone**, G. Donati, F. De Martini, P. Mataloni, *Polarization entanglement with GRaded-INdex lenses*, **Applied Physics Letters** **95**, 181110 (2009).
- [21] R. Ceccarelli, **G. Vallone**, F. De Martini, P. Mataloni, A. Cabello, *Experimental Entanglement and Nonlocality of a Two-Photon Six-Qubit Cluster State*, **Physical Review Letters** **103**, 160401 (2009).
- [20] R. Ceccarelli, **G. Vallone**, F. De Martini, P. Mataloni, *An Optical Scheme for the Generation and Analysis of a Two Photon Six-Qubit Linear Cluster State*, **Advanced Science Letters** **2**, 455 (2009).
- [19] A. Rossi, **G. Vallone**, A. Chiuri, F. De Martini, P. Mataloni, *Multipath entanglement of two photons*, **Physical Review Letters** **102**, 153902 (2009).
- [18] **G. Vallone**, R. Ceccarelli, F. De Martini, P. Mataloni, *Hyperentanglement of two photons in three degrees of freedom*, **Physical Review A** **79**, 030301(R) (2009), *Rapid communications*.
- [17] A. Cabello, A. Rossi, **G. Vallone**, F. De Martini, P. Mataloni, *Proposed Bell Experiment with Energy-Time Entanglement*, **Physical Review Letters** **102**, 040401 (2009).
- [16] A. Rossi, **G. Vallone**, F. De Martini, P. Mataloni, L. Businaro, G. Grenci and M. Tormen, *New perspectives in the generation of entangled qudit states*, **Journal of Modern Optics** **56**, 190 (2009).
- [15] **G. Vallone**, A. Rossi, R. Ceccarelli, F. De Martini, and P. Mataloni, *Towards hyperentangled states of two photons and six qubits*, **International Journal of Quantum Information (IJQI)** **7**, 117 (2009).
- [14] **G. Vallone**, R. Ceccarelli, F. De Martini, P. Mataloni, *Hyperentanglement witness*, **Physical Review A** **78**, 062305 (2008).
- [13] **G. Vallone**, E. Pomarico, F. De Martini, P. Mataloni,

One-way quantum computation with two-photon multiqubit cluster states,
Physical Review A 78, 042335 (2008).

- [12] A. Rossi, **G. Vallone**, F. De Martini, P. Mataloni,
Generation of time-bin entangled photons without temporal post-selection,
Physical Review A 78, 012345 (2008).
- [11] **G. Vallone**, E. Pomarico, F. De Martini, P. Mataloni,
Active one-way quantum computation with two-photon four-qubit cluster states,
Physical Review Letters 100, 160502 (2008).
- [10] **G. Vallone**, E. Pomarico, F. De Martini, P. Mataloni,
One-way quantum computation via manipulation of polarization and momentum qubits in two-photon cluster states,
Laser Physics Letters 5, 398 (2008).
- [9] **G. Vallone**, E. Pomarico, P. Mataloni, F. De Martini, M. Barbieri,
Experimental realization of polarization qutrits from non-maximally entangled states,
Physical Review A 76, 012319 (2007).
- [8] **G. Vallone**, E. Pomarico, P. Mataloni, F. De Martini, V. Berardi,
Realization and characterization of a two-photon four-qubit linear cluster state,
Physical Review Letters 98, 180502 (2007).
- [7] M. Barbieri, **G. Vallone**, P. Mataloni, F. De Martini,
Complete and deterministic discrimination of polarization Bell states assisted by momentum entanglement,
Physical Review A 75, 042317 (2007).
- [6] M. Barbieri, **G. Vallone**, F. De Martini, P. Mataloni,
Polarization-momentum hyper-entangled two photon states,
Optics and Spectroscopy 103(1), 129 (2007).
- [5] M. Barbieri, F. De Martini, P. Mataloni, **G. Vallone**,
Quantum nonlocality of polarization-momentum hyper-entangled states,
International Journal of Quantum Information (IJQI) 5, 37 (2007).
- [4] **G. Vallone**, P. Mataloni, F. De Martini, M. Barbieri,
Experiments of quantum nonlocality with polarization-momentum entangled photon pairs,
Laser Physics 17, 993 (2007).
- [3] M. Barbieri, F. De Martini, P. Mataloni, **G. Vallone**, A. Cabello,
Enhancing the violation of the Einstein-Podolsky-Rosen local realism by quantum hyper-entanglement,
Physical Review Letters 97, 140407 (2006).
- [2] M. Billó, M. Frau, A. Lerda, S. Sciuto, **G. Vallone**,
Non-commutative (D)-instantons,
Journal of High Energy Physics (JHEP) 0605, 069 (2006).
- [1] P. Merlatti, F. Sannino, **G. Vallone**, F. Vian,
N=1 super Yang-Mills domain walls via the extended Veneziano-Yankielowicz theory,
Physical Review D 71, 125014 (2005).

Book's chapters

- **G. Vallone**, P. Mataloni,
Chapter 6 - Generation and Applications of n-Qubit Hyperentangled Photon States,
Advances In Atomic, Molecular, and Optical Physics, Volume 60, 291-314 (2011).

Patents

- *Metodo e dispositivo per la modulazione di impulsi fotonici.*
Inventor(s): P. Villoresi, M. Avesani, D. Scalcon, G. Vallone,
Domanda di brevetto depositata il 25/11/2022;
- *Metodo di modulazione della polarizzazione di impulsi fotonici per la generazione di chiavi crittografiche quantistiche, e relativo modulatore di polarizzazione.*
Inventor(s): G. Vallone, C. Agnesi, M. Avesani, P. Villoresi
Italian Patent Number: IT201900019373A1
Deposit date: 21/10/2019; Publication Date: 21/04/2021; Patent date: 05/10/2021
International patent, *Polarization modulation method of photonic pulses for generating quantum cryptographic keys, and related polarization modulator*, published as:
PCT (WO2021078723A1), European Patent (EP4049387A1)
- *Metodo e apparato per generare numeri casuali.*
Inventor(s): P. Villoresi, G. Vallone, D.G. Marangon
Italian Patent Number: 0001427912
Deposit date: 31/12/2014; Publication Date: 01/07/2016; Patent date: 28/03/2017
European Patent: *Method and apparatus for generating a sequence of random bits*, EP3040853 A1, patent granted on 19/12/2018
- *A method and apparatus to extract true random numbers from complex spatial patterns.*
Inventor(s): P. Villoresi, G. Vallone, D.G. Marangon
Pub. No.: WO2015004688 A1
Priority Date: 10/07/2013; Publication Date: 15/01/2015
- *Porta logica in ottica integrata per qubit quantistici codificati in polarizzazione e relativo metodo di realizzazione ed utilizzo.*
Inventors: A. Crespi, P. Mataloni, R. Ramponi, L. Sansoni, F. Sciarrino, G. Vallone, R. Osellame
Italian Patent Number: 0001405299
Deposit Date: 05/05/2011; Publication Date: 06/11/2012; Patent date: 03/01/2014
International patent, *Integrated optics logic gate for polarization-encoded quantum qubits and a method for the production and use thereof*, published as:
PCT (WO2012150568 A1), US patent (US20140126030 A1), European Patent (EP2705472 A1)

Proceedings

32. M. Avesani, *et al*, *A quantum key distribution network in the metropolitan area of Padova*, **Proc. SPIE 12446, Quantum Computing, Communication, and Simulation III; 124460J (2023)**;
31. F. Vedovato, *et al*, *Realization of intermodal fiber/free-space quantum key distribution networks*, **Proc. SPIE 12446, Quantum Computing, Communication, and Simulation III; 124460Q (2023)**;
30. M. Avesani, *et al*, *QKD field-trial in Padua: a resource-effective implementation with the iPOGNAC encoder*, **Proc. SPIE 12015, Quantum Computing, Communication, and Simulation II; 120150A (2022)**;
29. L. Mazzarella, *et al*, *Goals and feasibility of the deep space quantum link*, **Proc. SPIE 11835, Quantum Communications and Quantum Imaging XIX; 118350J (2021)**;
28. M. Avesani, *et al*, *Silicon photonics-based experimental daylight free-space quantum key distribution at telecom wavelength*, **Proc. SPIE 11295, Advanced Optical Techniques for Quantum Information, Sensing, and Metrology; 1129508 (2020)**;
27. M. Avesani, C. Agnesi, M. Artiglia, G. Bianco, L. Calderaro, M. Chiesa, G. Contestabile, D. Dequal, C. Facchinetti, G. Foletto, A. Montanaro, A. Nottola, D. Rotta, M. Romagnoli, M. Schiavon, A. Scriminich, V. Sorianello, A. Stanco, S. Tirelli, A. Tuozzi, G. Vallone, F. Vedovato, M. Zahidy, P. Villoresi, *Space quantum communications programs at the Italian Space Agency*, **Proc. of IAC, IAC-19_B2_2_4_x54018 (2019)**; 70th International Astronautical Congress, IAC 2019, Washington (United States).
26. F. Sansone, A. Francesconi, F. Fistarollo, M. Ramadoro, M. Vitturi, R. Corvaja, G. Vallone, T. Occhipinti, I. Capraro, *LASERCUBE: a miniature laser communication terminal for nano and micro satellites*, in **Proc. ESA 4S Symposium, Sorrento (May 2018)**
25. G. Vallone, D. Dequal, M. Tomasin, M. Schiavon, F. Vedovato, D. Bacco, S. Gaiarin, G. Bianco, V. Luceri, P. Villoresi, *Satellite quantum communication towards GEO distances*, **Proc. SPIE 9900, Quantum Optics, 99000J (April 29, 2016)**;
24. M. Minozzi, S. Bonora, A. V. Sergienko, G. Vallone and P. Villoresi, *Bi-photon generation with optimized wavefront by means of adaptive optics*, **AIP Conf. Proc. 1633, 255 (2014)**.
23. I. Capraro, A. Tomaello, A. Dall'Arche, F. Gerlin, T. Herbst, R. Ursin, G. Vallone and P. Villoresi, *Turbulent single-photon propagation in the Canary optical link*, **AIP Conf. Proc. 1633, 128 (2014)**.
22. G. Vallone, V. D'Ambrosio, A. Sponselli, S. Slussarenko, L. Marrucci, F. Sciarrino, and P. Villoresi, *Alignment-free QKD along a free-space channel combining spinorial and orbital angular momentum*, **Frontiers in Optics (2014)**.

21. F. Gerlin, N. Laurenti, G. Naletto, G. Vallone, P. Villoresi, L. Bonino, S. Mottini, Z. Sodnik, *Design optimization for quantum communications in a GNSS intersatellite network*, **International Conference on Localization and GNSS (ICL-GNSS), 1-6 (2013)**.
20. L. Mazzarella, F. Ticozzi, A. V. Sergienko, G. Vallone, P. Villoresi, *Single-photon source with asymmetric multiplexed architecture*, **The Rochester Conferences on Coherence and Quantum Optics and the Quantum Information and Measurement meeting (2013)**.
19. M. Minozzi, S. Bonora, A. V. Sergienko, G. Vallone, P. Villoresi, *Biphoton generation with an optimized wavefront for free-space propagation by means of adaptive optics*, **The Rochester Conferences on Coherence and Quantum Optics and the Quantum Information and Measurement meeting (2013)**.
18. Minozzi M., Bonora S., Sergienko A.V., Vallone G., Villoresi P., *Adaptive optics control of the propagation of biphoton wavepacket* **Imaging and Applied Optics (2013)**.
17. G. Vallone, P. Villoresi, I. Capraro, A. Dall'Arche, A. Tomaello, F. Gerlin, *Experimental Study of Free-space Beam Propagation for Single-photon Quantum Communications*, **Res. Opt. Sci., JT2A.3 (OSA, 2012)**;
16. A. Tomaello, A. Dall'Arche, F. Gerlin, I. Capraro, G. Vallone, P. Villoresi, *Experimental Studies Toward the Quantum Communications with Orbiting Terminals*, **Res. Opt. Sci., QT4A.3 (OSA, 2012)**;
15. A. Crespi, L. Sansoni, G. Vallone, F. Sciarrino, R. Ramponi, P. Mataloni, and R. Osellame, *Femtosecond laser waveguide writing for integrated quantum optics*, **Proc. SPIE 8247, 82470L (2012)**;
14. I. Capraro, A. Tomaello, A. Dall'Arche, F. Gerlin, G. Vallone, P. Villoresi, *Long-range beam propagation for quantum communications*, **Proc. SPIE 8246, 82460H (2012)**;
13. M. Canale, D. Bacco, S. Calimani, F. Renna, N. Laurenti, G. Vallone, P. Villoresi, *A prototype of a free-space QKD scheme based on the B92 protocol*, **Proceedings of the 4th International Symposium on Applied Sciences in Biomedical and Communication Technologies, 186 (2011)**, Isabel 2011, Barcelona, Spain.
12. R. Corvaja, I. Capraro, A. Dall'Arche, N. Dalla Pozza, F. Gerlin, A. Tomaello, M. Zorzi, A. Assalini, A. Ferrante, G. Pierobon, F. Ticozzi, G. Vallone, P. Villoresi, *Engineering a Long Distance Free-Space Quantum Channel*, **Proceedings of the 4th International Symposium on Applied Sciences in Biomedical and Communication Technologies, 187 (2011)**, Isabel 2011, Barcelona, Spain.
11. L. Sansoni, F. Sciarrino, G. Vallone, P. Mataloni, A. Crespi, R. Ramponi, R. Osellame, *Polarization entangled states measurement on a chip*, **Conf. Lasers Electro-Optics (CLEO), JTuA4 (2011)**;
10. L. Sansoni, F. Sciarrino, G. Vallone, P. Mataloni, A. Crespi, R. Ramponi, R. Osellame. *Polarization entangled states measurement on a chip*. **Proc. SPIE 8072, Photon Counting Applications, Quantum Optics, and Quantum Information Transfer and Processing III, 80720Q (2011)**;
9. C. Bonato, S. Bonora, A. Chiuri, P. Mataloni, G. Milani, G. Vallone, P. Villoresi, *Phase control of a path-entangled photon state by a deformable membrane mirror*, **AIP Conf. Proc. 1363, 17 (2011)**;
8. Chiuri A., Vallone G., Paternostro M., Adesso G., Mataloni P., *Experimental study of non-classicality indicators and extremal quantum correlations in two-qubit states*, **Lasers and Electro-Optics Europe (CLEO EUROPE/EQEC), Conference on and 12th European Quantum Electronics Conference (2011)**;
7. Crespi A., Sansoni L., Sciarrino F., Vallone G., Ramponi R., Osellame R., Mataloni P. *Integrated optical circuits for polarisation-entangled photons*, **Lasers and Electro-Optics Europe (CLEO EUROPE/EQEC), Conference on and 12th European Quantum Electronics Conference (2011)**;
6. G. Vallone, R. Ceccarelli, A. Rossi, F. De Martini, P. Mataloni, *Two-photon multiqubit hyperentangled/cluster states*, **AIP Conf. Proc. 1110, 145 (2009)**;
5. G. Vallone, R. Ceccarelli, P. Mataloni, *2-photon multiqubit cluster state*, **Proc. of SPIE 7236, Quantum Communications Realized II, 723602 (2009)**;
4. G. Vallone, E. Pomarico, F. De Martini, P. Mataloni, *Two-photon four-qubit linear cluster states*, **Proc. of SPIE 6726, ICONO 2007, 672629 (2007)**;
3. P. Mataloni and G. Vallone, *Hyperentangled photon states for quantum information*, **Frontier developments in optics and spectroscopy, editor B. Di Bartolo and O'Forte (2007)**;
2. Vallone G., Pomarico E., Mataloni P., De Martini F., Berardi V. *Realization and characterization of a 2-photon 4-qubit linear cluster state*, **European Conference on Lasers and Electro-Optics, and the International Quantum Electronics Conference, CLEOE-IQEC (2007)**;
1. G. Vallone, E. Pomarico, F. De Martini, P. Mataloni, *New perspectives in generation and manipulation of hyperentangled states*, **Proc. of SPIE 6780, Quantum Communications Realized, 67800F (2007)**;

2.2 Grants and Projects

Scientific responsibility in National and international grants

- 15) 2023-2025: Coordinator of the European project "QUDICE" funded by EU. The project involves 11 partners for a total budget of about 4.3 M€.

- 14) 2021-2023: Coordinator of the European project “QUANGO” funded by EU within the call H2020-SPACE-2018-2020. The project involves 7 partners (3 companies and 4 Universities) for a total budget of about 2.1 M€.
- 13) 2020-2022: Responsible for the University of Padova of the project “H2020 Exp. Payload - Optical payload for ranging and communications” funded by ESA in the call for Tender AO/1-9566/18/NL/AS, coordinated by Thales-CH.
- 12) 2021-2024: Responsible for the University of Padova of the project “AppQInfo”, a “Marie Skłodowska-Curie Innovative Training Networks” funded by EU. The project will fund two Ph.D. grants to be hosted in the University of Padova.
- 11) 2020-2022: Responsible for the INFN (Sezione di Padova) in the project SECRET funded with the EU call-QUANTERA. The funding for the INFN is 106 k€.
- 10) 2020-2022: Coordinator of the project “QUASAR - QUAntum SAfe Randomness”, funded by the Cariparo foundation within the “Bando Ricerca Scientifica di Eccellenza”. The funding for the University of Padova is 350 k€.
- 9) 2019-2021: Technical Responsible for the University of Padova, together with Prof. Paolo Villoresi, of the project *QUASIX (single photon integrated source for QUAntum Silicon Communications in Space)* coordinated by Dr. Enrico Prati (CNR-IFN). I’m responsible of the Work Package 7101 with title *Definition of the relevant parameters for integrated sources*. The funding for the University of Padova is 40 k€.
- 8) 2018-2021: Responsible of the Work Packages WP4000 (Design of a common platform between QKD systems in free-space and fiber) and WP5000 (Feasibility study of new QKD protocols) within the project *Q-SecGroundSpace - Intermodal Secure Quantum Communication on Ground and Space* funded by ASI (Agenzia Spaziale Italiana) and coordinated by the University of Padova. The funding for the University of Padova is 379 k€.
- 7) 2017-18: Responsible for the University of Padova in the project “SeQBO (Secure Quantum-communication Based On-board-computer)”, funded by the Ministry of Defence. The prime investigator is ARGOTEC S.r.l. and the research consortium is composed by ARGOTEC and the University of Padova. The funding for the University of Padova is 134,5 k€.
- 6) 2017-2018: Responsabile del *Task 3.2 - Quantum Communication Feasibility Study* nel progetto *LASERCUBE: an optical communication system for miniature satellites*, finanziato dall’ESA all’interno del programma AO/1-8595/16/NL/US - ARTES Entry. L’Università di Padova (rappresentata dal Prof. Roberto Corvaja) è sub-contractor della ditta Stellar Project con un finanziamento pari a circa 72 k€.
- 5) 2017-2018: Winner of the grant “Secure and fast random number generators based on quantum processes”, funded by the University of Padova for a post-doc fellowship that I supervised.
- 4) 2017: Winner of 35k€ within the call “Bando attrezzature” funded by the Department of Information Engineering of the University of Padova. The Call was intended to promote the acquisition of innovative and high-quality scientific equipment.
- 3) 2016-2019: Responsabile del Work Package dal titolo *Realizzazione del terminale ricevitore* nel progetto *QComm-SpaceOne* coordinato dal Prof. P. Villoresi (Università di Padova) e finanziato dall’ASI (Agenzia Spaziale Italiana). Il progetto è stato realizzato in collaborazione con il Sant’Anna di Pisa. Ho partecipato a tutte le altre attività previste nel progetto. Il finanziamento per l’Università di Padova è pari a circa 430 k€.
- 2) 2015: Winner of the “Bando a sostegno dei ricercatori per attività di networking e presentazione di progetti di ricerca internazionali - anno 2014/2015”, 5000€, funded by the University of Padova.
- 1) 2014-16: Principal investigator of the project *OAM in free space: a new resource for QKD* (codice: CPDA138592/13), funded by the University of Padova (Progetti di ricerca di Ateneo - Bando 2013).

2.3 Organization activities

- Member of the **Reviewing Committee** of the conference “Quantum Technology International Conference 2020 - QTech 2020”, Barcelona (6-8 April 2020, postponed to 2-4 November 2020).
- Member of **Program Committee** of the conference “9th International Conference on Quantum Cryptography - QCRYPT 2019”, Montreal (26-30 August 2019)
- **Organizer** of the session “Satellite Quantum and Optical Communication” in the conference “Progress In Electromagnetics Research Symposium - PIERS 2019”, Roma, (17-20 June, 2019)
- Member of **Program Committee** of the conference “5th Quantum Information and Measurement”, Rome (4-6 April 2019)
- Member of the **Program Committee** for the topic area “EB - Quantum Information, Communication and Simulation” in the *Conference on Lasers and Electro-Optics Europe (CLEO/Europe) and European Quantum Electronics Conference (EQEC) 2019*, Monaco (DE), 23-27 June 2019.

- Member of the **Local Organising Committee** of the conference *School of Quantum Communications Networks* organized within the project ITN-network QCall, Padova, 19-22 September 2018.
- Member of the **Scientific Committee** of the conference *IQIS 2018 - 11th Italian Quantum Information Science conference*, Catania (September 17-20, 2018).
- Member of the **Scientific Committee** of the conference *IQIS 2017 - 10th Italian Quantum Information Science conference*, Florence (September 12-15, 2017).
- Member of the **Program Committee** of the conference *QCrypt 2016, 6th International conference on quantum cryptography*, Washington, DC (September 12-16, 2016).
- Member of the **Organizing Committee** of the Winter School QSNOW2013: Winter School in Quantum Communications, Asiago (February 4-8, 2013).
- Member of the **Organizing Committee** of the conference IQIS2012: 5th Italian Quantum Information Science Conference, Padova (September 26-28, 2012).
- Member of the **Organizing Committee** of the International Conference: "QIPC2009: 8th International Conference on Quantum Information Processing and Communication", Rome (September 21-25, 2009).

2.4 Conference Communications and Seminars

- 51) *Quantum Optics and Information @ UniPD*, **invited talk** at the international conference "Quantum Correlations, Contextuality, and all that again³", Natal (BRA), 25-29 November 2019.
- 50) *Quantum Technologies: a new frontier in cyber-security*, **invited talk** at the conference "Workshop GARR 2019", Roma (IT), 8-10 October 2019.
- 49) *Secure Quantum Random Number Generators for Quantum Communication*, **invited talk** at the International Conference on Emerging Quantum Technology (ICEQT 2019), Hefei (PRC), 15-20 September 2019.
- 48) *Quantum Technologies: a new frontier in cyber-security*, **invited lecture** at the "2019 International Summer School on Cyber-Physical System Security", Padova (IT), 1-5 July 2019.
- 47) *Satellite quantum communication with OAM and other photon degrees of freedom*, **invited talk** at the conference "5th International Conference on Optical Angular Momentum - ICOAM 2019", Ottawa (CA), 17-21 June 2019.
- 46) *Quantum Communications and Fundamental Physics in Space*, **presentazione** at the conference Photonics & Electromagnetics Research Symposium – Progress In Electromagnetics Research Symposium (PIERS 2019), Roma (IT), 17 - 20 June 2019
- 45) *Quantum communications in Space*, **invited talk** at the conference "ITASEC19 - Italian Conference on Cyber-Security", Pisa (IT), 12 - 15 February 2019
- 44) *Quantum Communications and Fundamental Physics in Space*, **invited talk** at the conference "Is quantum theory exact", Frascati (IT), 2-5 July 2018
- 43) *Quantum Communications and Fundamental Physics in Space*, **invited talk** at the conference Photonics North 2018, Montreal (Canada), June 5-7, 2018
- 42) *Free-space and satellite quantum communication*, **3 invited lectures** at the "School on Quantum Communication", Ottawa (CA), 2-3 June 2018.
- 41) *An introduction to Quantum Computing and Quantum Random Number Generators*, **invited talk** (via Skype) at the conference "INFN and The Future of Scientific Computing", Torino, 4 May 2018.
- 40) *Introduction to Quantum Information and its applications*, **invited lecture** per la "QUARTZ Winter School", organized within the project QUARTZ (Innovative Training Network), Dipartimento di Ingegneria dell'Informazione, Università di Padova, 7-14 February 2018.
- 39) *Satellite quantum communication and Quantum Random Number Generators*, **invited seminar** at the Physics Department of the University of Pavia, 26 January 2017.
- 38) *Quantum Communication in space*, **invited talk** at the conference "Quantum optical communication and sensing", Arcetri (FI), 20 December 2017.
- 37) *Introduction to discrete variable Quantum Key Distribution*, **invited tutorials (three lectures)** at the "Quantum Info workshop", Guanajuato (Mexico), November 1-6, 2017
- 36) *Enhanced security in Quantum Random Number Generation*, **contributed talk** at the conference "IQIS2017 - 10th Italian Quantum Information Science conference", Firenze, 12-15 September 2017.
- 35) *Introduction to quantum communications: challenges and perspectives for Space*, **invited tutorial** at the "4th IEEE International Workshop on Metrology for AeroSpace (MetroAeroSpace)", Padova, June 21-23, 2017
- 34) *Secure and Ultrafast Quantum Random Number Generators*, **oral presentation** at the "Galileo Festival dell'innovazione", Padova, May 11-13, 2017
- 33) *Secure Random Number Generators*, **oral presentation** at the workshop "SINGLE PHOTON DEVICES - The Italian perspective", CNR, Roma, April 21, 2017

- 32) *Quantum Key Distribution in Space*, **oral presentation** at the workshop “Space Quantum Technology”, Italian Space Agency (ASI), Roma, March 21-23, 2017
- 31) *Satellite quantum communication and secure random number generators*, **invited seminar** at “Nanoscience Laboratory Kick off meeting”, Polo Scientifico Tecnologico Fabio Ferrari, Povo (Trento), November 25, 2016
- 30) *Single-photon interference and quantum communications from satellites*, **invited seminar** at the Dep. of Physics of the University di Torino, October 10, 2016.
- 29) *Scientific goals of Space Quantum Communications*, **skype presentation** at the Workshop "Space Quantum Communications: Promoting a US-Italy Scientific Cooperation on the new frontier of Quantum Technologies", Ambasciata Italiana a Washington DC (USA), 13 October 2016.
- 28) *Quantum communication and random number generators with photons*, **invited presentation** at the conference PBQ, Olomouc (CZ), October 3, 2016.
- 27) *Time-bin encoding along satellite-ground channels*, **oral presentation** at the conference “6th International conference on quantum cryptography (QCrypt 2016), Washington DC (USA), September 12-16, 2016.
- 26) *Direct Measurement of the Quantum Wave Function by Strong interactions*, **invited seminar** at the Wien University of Technology, Wien, June 10, 2016.
- 25) *Free-space quantum key distribution with OAM light beam*, **contributed talk** at the conference FOTONICA 2016, Rome, June 6-8, 2016.
- 24) *Satellite quantum communication towards GEO distances*, **contributed talk** at the conference SPIE - Quantum Technologies, Bruxelles, April 4-7, 2016.
- 23) *Free-space quantum key distribution with OAM light beam*, **contributed talk** at the conference QIPC2015, Leeds, UK, September 15, 2015.
- 22) *Quantum Randomness Certified by the Uncertainty Principle*, **contributed talk** at the conference SPW2015, Geneve, July 15, 2015.
- 21) *Deformable mirrors for Quantum Optics applications*, **contributed talk** at the conference AOIM 2015, Padova, June 17, 2015
- 20) *From Bell inequalities to quantum information*, **invited seminar** at the Stony Brook University, June 16, 2015.
- 19) *Free-Space Quantum Communications based on Orbital Angular Momentum*, **invited talk** at the conference pcD-VT, Arlington (Virginia, USA), June 7-11, 2015.
- 18) *Dalle disuguaglianze di Bell alla crittografia quantistica*, **Colloquium** at the Physics Dep. of the University of Torino, June 5, 2015.
- 17) *Free-space quantum communication*, **invited seminar** at the Dep. of Physics of the University of Naples “Federico II”, May 12, 2015.
- 16) *Quantum Communications in space using satellites*, **oral presentation** at the workshop Fundamental and Quantum Physics with Lasers, Laboratori Nazionali di Frascati dell’INFN, 23 October 2014.
- 15) *Finite-size QKD and quantum randomness from the uncertainty principle*, **invited presentation** at the conference International Laser Physics Workshop (LPHYS’14), Sofia, 14-18 July 2014.
- 14) *QKD in free space: channel characterization and security analysis in the finite-key regime*, **contributed talk** at 5th QIPC2013: Quantum information processing and communication, International Conference, Firenze, June 30-July 5, 2013.
- 13) *Impact of turbulence in long range quantum communications*, **contributed talk** at the IQIS 2012, 5th Italian Quantum Information Science conference, Padova, September 26-28, 2012.
- 12) *Long range beam propagation for quantum communications*, **contributed talk** at the conference 2012 Photonics West, Free-Space Laser Communication Technologies XXIV, San Francisco, USA, January 21-26, 2012.
- 11) *Quantum computation and simulation with photons*, **invited seminar** at the University of Padova – Department of Information Engineering, Padova, January 19, 2011.
- 10) *Six-qubit two-photon hyperentangled cluster states: characterization and application to quantum computation*, G. Vallone, G. Donati, N. Bruno, R. Ceccarelli, A. Chiuri, P. Mataloni, **contributed talk** at the conference “FOTONICA 2010, Convegno Nazionale delle Tecnologie Fotoniche”, CNR-Pisa, May 25-27, 2010
- 9) *Hyperentangled photon states: a resource for quantum information*, G. Vallone, R. Ceccarelli, G. Donati, P. Mataloni, **invited seminar** at the University of Milan, Physics Department, Milan, Italy, December 15, 2009.
- 8) *Multi-qubit entangled photon states*, G. Vallone, R. Ceccarelli, G. Donati, F. De Martini, P. Mataloni, **contributed talk** at “XCV Congresso Nazionale Società Italiana di Fisica”, Bari (Italy), September 28 - October 3, 2009, .
- 7) *Phase control of a longitudinal momentum entangled photon state by a deformable membrane mirror*, C. Bonato, S. Bonora, A. Chiuri, F. De Martini, P. Mataloni, G. Milani, G. Vallone, and P. Villoresi, **contributed talk** at QuantumComm 2009, International Conference on Quantum Communication and Quantum Networking, Vico Equense (NA), Italy, October 26-30, 2009
- 6) *Multi-path entanglement of two photons*, G. Vallone, A. Chiuri, G. Donati, P. Mataloni, F. De Martini, **contributed talk** at the “11th International Conference on Squeezed States and Uncertainty Relations” – ICSSUR 2009, Olomouc, Poland, June 23, 2009.

- 5) *Multi-qubit entangled photon states*, G. Vallone, R. Ceccarelli, A. Chiuri, G. Donati, P. Mataloni, F. De Martini, **invited seminar** at the University of Padova – Department of Information Engineering, Padova, April 20, 2009.
- 4) *Multi-qubit entangled photon states*, G. Vallone, R. Ceccarelli, A. Rossi, P. Mataloni, F. De Martini, **invited seminar** at the University of Torun, Poland, 9 January 2009.
- 3) *Ogni cosa è quantizzata*, Fabio Sciarrino and Giuseppe Vallone with Giovanni Caprara, **invited talk** at “Festivaletteratura” of Mantova, September 3-7, 2008.
- 2) *Experiments with 2-photon cluster state: from non-locality to quantum computation*, G. Vallone, E. Pomarico, F. De Martini, P. Mataloni, **invited seminar** at the university of Seville, November 2007.
- 1) *Realization and characterization of 4-qubit 2-photon cluster state*, **contributed talk** at “Conference on Lasers and Electro-Optics and the International Quantum Electronics Conference (CLEO/Europe and IQEC)”, Munchen (Germany), June 17-22, 2007.

2.5 Activity as scientific reviewer

I'm reviewer for the following international journal: Nature, Nature Photonics, Nature Physics, Nature Communication, Optica, Physical Review X, Science Advances, Physical Review Letter, Scientific Reports, Journal of Lightwave Technology, Optics Express, New Journal of Physics, Quantum Information & Computation, Physical Review A, Entropy, Journal of Optics, Quantum Science and Technology, Optics Letters, Journal of the Optical Society of America B, Journal of Physics A: Mathematical and Theoretical, Journal of Modern Optics, CEAS Space Journal, Photonics, Quantum.

Other activity as reviewer are listed below:

Project reviewer

- **Aprile-maggio 2022**: sono stato membro del Referee Panel per il “Research Council of Norway (RCN)” in 2022. Il panel ha valutato 23 proposte di ricerca.
- **Aprile 2021**: commissione STAR plus linea 2, sono stato nominato membro della Commissione per la valutazione comparativa prevista dal Bando per il Finanziamento di Soggiorni all’Estero - Annualità 2020 - relativo alla linea d’intervento 2 del programma STAR – Mobilità Giovani Ricercatori presso l’Università di Napoli. Il panel 2, a cui ho partecipato ha valutato 19 domande
- **Settembre 2020**: sono stato nominato dal Natural Sciences and Engineering Research Council of Canada (NSERC) membro del “Canada - UK Quantum Technologies Selection Committee”. Il panel ha valutato 6 proposte di ricerca.
- **May 2018**: I reviewed a project submitted to the Swiss National Science Foundation (SNSF).
- **October 2017**: I reviewed some projects within the Programma per Giovani Ricercatori “Rita Levi Montalcini”.
- **September 2017**: I reviewed a project submitted to the call BRIDGE, a research programme of Swiss National Science Foundation (SNSF) and the Commission for Technology and Innovation (CTI).
- **July 2017**: I reviewed a project submitted to the call “Research Projects of significant financial relevance” (40.000€) of the University La Sapienza of Rome.
- **May 2017**: I reviewed a project submitted to the Swiss National Science Foundation (SNSF).
- **October 2016**: I reviewed the Ph.D. thesis in Physics - Università di Pavia of the student Angelica Simbula.
- **October 2016**: I reviewed a proposal for a Post-Doc grant for the Università degli Studi dell’Insubria
- **Mach 2015**: I reviewed the Ph.D. thesis of Marco Mariola, “PhD degree at the School of Chemistry and Physics”, Westville Campus, Università di KwaZulu-Natal, Sudafrica.
- **February 2015**: I reviewed some proposal submitted to the Programma per Giovani Ricercatori “Rita Levi Montalcini”.
- **March 2013**: I reviewed 3 proposal submitted to the call “Futuro in Ricerca - FIRB 2013”.

Scientific conference commettee

- **Program committee Co-Chair** of the conference “13th International Conference on Quantum Cryptography - QCRYPT 2023”, University of Maryland, 14-18 agosto 2023.
- Member of the **Program Committee** della *Conference on Lasers and Electro-Optics Europe (CLEO/Europe) and European Quantum Electronics Conference (EQEC) 2023*, “topic area EB – Quantum Information, Communication, and Sensing”. La conferenza si è tenuta a Monaco (GE), 26 - 29 Giugno 2023.

- Member of the **technical program committee** per la *2023 IEEE International Conference on Communications; Selected Areas in Communications: Quantum Communications and Information Technology (IEEE ICC'23 - SAC-11 QCIT Track)*, 28 Maggio - 01 Giugno 2023, Roma.
- Member of the **Program Committee** all'interno della *Conference on Lasers and Electro-Optics Europe (CLEO/Europe) and European Quantum Electronics Conference (EQEC) 2021*, Evento Virtuale, 21-25 Giugno 2021.
- Member of the **Program Committee** per la conferenza "11th International Conference on Quantum Cryptography - QCRYPT 2021", online, 23-27 agosto 2021).
- Member of the **Program Committee** per la conferenza "Quantum Information & Measurement VI 2021", online (31 Ottobre - 4 Novembre 2021).
- Member of the **Program Committee** per la conferenza "10th International Conference on Quantum Cryptography - QCRYPT 2020", online, 10-14 agosto 2020).
- Member of the **Reviewing Committee** of the conference "Quantum Technology International Conference 2020 - QTech 2020", Barcelona (6-8 aprile 2020).
- Member of the **Program Committee** per la conferenza "9th International Conference on Quantum Cryptography - QCRYPT 2019", Montreal (26-30 agosto 2019).
- Member of the **Program Committee** per la conferenza "5th Quantum Information and Measurement", Rome (4-6 aprile 2019)
- Member of the **Program Committee** per la topic area "EB - Quantum Information, Communication and Simulation" all'interno della *Conference on Lasers and Electro-Optics Europe (CLEO/Europe) and European Quantum Electronics Conference (EQEC) 2019*, Monaco (DE), 23-27 Giugno 2019.
- Member of the **Scientific Committee** of the conference *11th Italian Quantum Information Science conference - IQIS2018*, Catania, 17-20 Settembre 2018.
- Member of the **Scientific Committee** of the conference *Quantum Technology International Conference 2018*, Parigi, 5-7 Settembre 2018.
- Member of the **Scientific Committee** of the conference *IQIS2017 - 10th Italian Quantum Information Science conference*, Firenze, 12-15 settembre 2017.
- Member of the **Program Committee** of the conference *6th International conference on quantum cryptography (QCrypt 2016)*, Washington DC, 12-16 Settembre 2016.

3 Teaching activity

A. A.	Course	Department
2021/22 2022/23 2023/24	Lecturer, together with prof. N. Laurenti, of the course <i>Quantum Cryptography & Security</i>	Information Engineering - University of Padova
from 2017/18 to 2023/24	Titolare del corso <i>Quantum Information and Computing</i> , corso di laurea magistrale in Ingegneria per le comunicazioni multimediali e Internet Information Engineering - University of Padova	
2019-20 2018-19 2017-18	Lecturer of <i>Quantum information and computing</i> , first year of the course "ICT for internet and multimedia"	Dep. of Information Engineering, University of Padova
From 2011-12 to 2019-20	Lecturer of <i>Elementi di Fisica II (electromagnetism)</i>	second year of the Informatic Engineering course, Dep. of Information Engineering, University of Padova

2014-15 2012-13	Lecturer, together with Prof. P. Villoresi, of <i>Introduction to Quantum Optics</i>	Ph.D. program of the Graduate School in Information Engineering, Dep. of Information Engineering, University of Padova
2019-20 2016-17 2012-13	Lecturer of the course <i>Quantum Communication, MOD. II</i>	Scuola Galileiana di Studi Superiori - University of Padova
2010-11 2009-10	Lecturer, together with Fabio Sciarrino, of the course "Quantum Information" of the Ph.D.	course in Physics, University Sapienza of Rome
2009-10	Assistant fellowship in the undergraduate course <i>Laboratorio di calcolo</i>	Physics Department of the University Sapienza of Rome (Prof. L. Barone)
2008-09	Assistant fellowship in the undergraduate course ' <i>Physics Generale</i> (general physics)	first years of Degree in Geological Science at the University Sapienza of Rome (Prof. A. Sutura)
2007-08	Assistant fellowship in the undergraduate course <i>Termodinamica e laboratorio</i> (thermodynamics and laboratory)	second years of Degree in Physics at the University Sapienza of Rome (Prof. P. Dore and N. L. Saini)
2002-03	Fellowship as tutor in the undergraduate course of <i>Mechanics and Waves, fluids and termodynamics</i>	Physics Department, University of Turin
2000-01	Fellowship for undergraduate student as teaching assistantship	Physics Department, University of Turin

3.1 Mentoring and Supervisions

Supervision of 8 Ph.D. students

Supervisor of 16 Master thesis

Supervisor of 33 Bachelor thesis

Padova, 8 febbraio 2024

Giuseppe Vallone