Mauro Valeri

Education

2021–present **Post-doc in Quantum Optics and Quantum Information**, *Sapienza Università di Roma, Quantum Information Lab Group*, Rome, Italy.
Supervisor: Prof. Fabio Sciarrino

2017–2021 **Ph.D. student in Quantum Optics and Quantum Information**, *XXXIII cycle, Sapienza Università di Roma, Quantum Information Lab Group*, Rome, Italy.
Title: *Photonics Technologies for Quantum Communication and Metrology*
Supervisor: Prof. Fabio Sciarrino

2014–2016 **Master degree in Condensed Matter Physics**, *Sapienza Università di Roma*, Rome, Italy, 110/110 cum laude.
Title: *Sorgenti di coppie di fotoni entangled alla lunghezza d'onda telecom*
Supervisor: Prof. Fabio Sciarrino

2010–2013 **Bachelor degree in Physics**, *Sapienza Università di Roma*, Rome, Italy, 110/110 cum laude.
Title: *Utilizzo di impulsi ultracorti per scattering Raman stimolato*
Supervisor: Prof. Tullio Scopigno

2005–2010 **High School Diploma** , *Liceo Scientifico Vito Volterra*, Ciampino (RM), Italy.
100/100

Summer Schools

July 2018 International School of Physics "Enrico Fermi" Course 204: Nanoscale Quantum Optics in Varenna, Italy

May 2018 Secure Quantum Communications School (QCALL) in Baiona, Spain

Other Courses

May 2020 Coursera online course: Machine Learning, Stanford University
https://coursera.org/share/5aa7ccc93a8606374100719b4bae1c35

Awards

2017-2020 *Borsa di Dottorato* offered by Sapienza Università di Roma

2010-2013 *Percorso di Eccellenza*, lectures addressed to outstanding bachelor students of Physics Department

2010-2012 University taxes exoneration *Studente Meritevole*

Scientific Conference/Workshop Contributes

Oral Presentations

November 2021	Oral presentation at the all-virtual conference Quantum Information and Measurement (QIM) VI 2021, Washington. Title: *Adaptive two-phase estimation on a photonic integrated device*
February 2020	Oral presentation at the virtual conference IMEKO TC-4 2020, Palermo, Italy. Title: *Quantum two-phase estimation inside a photonic integrated device*
February 2019	Oral presentation at the Italian Conference on CyberSecurity (ITASEC19) in Pisa, Italy. Title: *Integrated photonics devices for quantum cryptography*

Posters

September 2019	Poster at Causality in the quantum world workshop in Anacapri, Italy. Title: *Integrated multiarm interferometers for quantum multiphase estimation protocols*
April 2019	Poster at Quantum Information and Measurement (QIM) V conference in Rome, Italy. Title: *Integrated source of entangled photon pair at telecom wavelength*

Outreach activities

2018-2021	**Member of RAYS (SPIE and OSA La Sapienza Student Chapter)**, RAYS (Rome Association of Young Scientist) is a group of PhD students and master students in physics devoted to scientific divulgation and outreach activities. The chapter is supported by the american societies SPIE (Society of Photo-Optical Instrumentation Engineers) and OSA (The Optical Society).

Computer skills

Operating systems	Linux, Microsoft Windows (major experience) Macintosh (minor experience)
Programming languages	C, PYTHON, Mathematica (major experience) Matlab, Octave, LabView (minor experience)
Graphics	Inkscape, AutoCAD (minor experience)
Other softwares	LaTeX, Microsoft Office package (major experience)

Experimental research skills

- Optics and Quantum Optics
- Physics and Quantum Physics
- Optical fibers and Integrated Optics

Languages

Italian	**Mothertongue**
English	**Intermediate**

Publications

○ S. Atzeni, A.S. Rab, G. Corrielli, E. Polino, **M. Valeri**, P. Mataloni, N. Spagnolo, A. Crespi, F. Sciarrino, and R. Osellame, *Integrated sources of entangled photons at the telecom wavelength in femtosecond-laser-written circuits*, Optica, 5, 311-314, (2018).

○ D. Cozzolino, E. Polino, **M. Valeri**, G. Carvacho, D. Bacco, N. Spagnolo, L. K. Oxenlowe and F. Sciarrino, *Air-core fiber distribution of hybrid vector vortex-polarization entangled states*, Advanced Photonics, 1, 4, (2019).

○ D. Poderini, I. Agresti, G. Marchese, E. Polino, T. Giordani, A. Suprano, **M. Valeri**, G. Milani, N. Spagnolo, G. Carvacho, R. Chaves, and F. Sciarrino, *Experimental violation of n-locality in a star quantum network*, Nature communications, 11, 1, 1-8, (2020).

○ E. Polino[1], **M. Valeri**[1], N. Spagnolo, and F. Sciarrino, *Photonic quantum metrology*, AVS Quantum Sci., 2, 0247034, (2020).

○ E. Polino, M. Riva, **M. Valeri**, R. Silvestri, G. Corrielli, A. Crespi, N. Spagnolo, R. Osellame, and F. Sciarrino, *Experimental multiphase estimation on a chip*, Optica, 6, 288-295, (2019).

○ **M. Valeri**, E. Polino, D. Poderini, N. Spagnolo, I. Gianani, G. Corrielli, A. Crespi, R. Osellame, and F. Sciarrino, *Experimental adaptive Bayesian estimation of multiple phases with limited data*, NPJ Quantum Information, 6, 92, (2020).

○ K. Rambhatla, S. E. D'Aurelio, **M. Valeri**, E. Polino, Spagnolo, and F. Sciarrino, *Adaptive phase estimation through a genetic algorithm*, APS Phys. Rev. Research, 2, 3, 033078, (2020).

○ V. Cimini[2], E. Polino[2], **M. Valeri**[2], I. Gianani, N. Spagnolo, G. Corrielli, A. Crespi, R. Osellame, M. Barbieri, F. Sciarrino, *Calibration of multiparameter sensors via machine learning at the single-photon level*, Physical Review Applied, 15(4), 044003, (2021).

○ F. Basso Basset[3], **M. Valeri**[3], E. Roccia, V. Muredda, D. Poderini, J. Neuwirth, N. Spagnolo, M. B. Rota, G. Carvacho, F. Sciarrino, and R. Trotta, *Quantum key distribution with entangled photons generated on-demand by a quantum dot*, Science Advances, 7, 12, (2021).

○ G. Carvacho, E. Roccia, **M. Valeri**, F. Basso Basset, D. Poderini, C. Pardo, E. Polino, L. Carosini, M. B. Rota, J. Neuwirth, S. F. C. Da Silva, A. Rastelli, N. Spagnolo, R. Chaves, R. Trotta, and F. Sciarrino, *Quantum violation of local causality in urban network with hybrid photonic technologies*, arXiv preprint arXiv:2109.06823 (2021).

[1,2,3]These authors contributed equally.