

Andrea Geraldini

Education

- 2017–Present **Ph.D. student in Quantum Optics and Quantum Information.**
Institution: University of Rome "La Sapienza", Rome, Italy
Title: *Experimental study of anomalous diffusion regimes via all-optical quantum walks and multiphoton quantum walks* Supervisor: Prof. Paolo Mataloni
- September–December 2019 **Abroad period.**
Institution: University of Paderborn, Paderborn, Germany
Supervisor: Prof. Christine Silberhorn
- 2015–2017 **Master degree in Condensed Matter Physics.**
Grades: 110/110 cum laude
Institution: University of Rome "La Sapienza", Rome, Italy
Title: *Generazione di uno stato hyperentangled in cammino e in polarizzazione con fotoni non degeneri e Stimulated Emission Tomography*
Supervisors: Prof. Paolo Mataloni and Dr. Mario Arnolfo Ciampini
- 2012–2015 **Bachelor degree in Physics.**
Grades: 110/110
Institution: University of Rome "La Sapienza", Rome, Italy
Title: *Impatto delle interazioni concomitanti sugli esperimenti al LHC*
Supervisor: Prof. Daniele Del Re
- 2007–2012 **High School Diploma in Classics / Classical Studies.**
Grades: 97/100
Institution: Liceo Lucio Anneo Seneca, Rome, Italy

Summer Schools

- July 2018 **Course 204: Nanoscale Quantum Optics.**
Institution: International School of Physics "Enrico Fermi", Varenna, Italy

Online Courses

- May 2020 **Machine Learning.**
Grades: 100% completed
Certificate: <https://coursera.org/share/63facc08331348f8373d122b2f82fed6>
Institution: Coursera online course by Stanford University

Experience and Outreach Activities

- 2018–present **Referee of the American Physical Society.**
- 2018–present **President of the SPIE Chapter**, University of Rome "La Sapienza", Rome, Italy.
- 2017–present **Vice-president of the OSA Chapter**, University of Rome "La Sapienza", Rome, Italy.
- 2017–2018 **Secretary of the SPIE Chapter**, University of Rome "La Sapienza", Rome, Italy.

Awards

2017–2020 **Ph.D. Scholarship offered by Sapienza University of Rome**, University of Rome "La Sapienza", Rome, Italy.

Publications

- 2020 Nosrati, F., Laneve, A., Shadfar, M. K., **Geraldi, A.**, Mahdavi-pour, K., Pegoraro, F., Mataloni, P., Franco, R. L. (2020). "Quantum information spreading in a disordered quantum walk", Submitted to PRL
- 2020 **Geraldi, A.**, De, S., Laneve, A., Barkhofen, S., Sperling, J., Mataloni, P., Silberhorn, C., "Subdiffusion via Disordered Quantum Walks", Submitted to PRL
- 2019 **Geraldi, A.**, Laneve, A., Bonavena, L. D., Sansoni, L., Ferraz, J., Fratalocchi, A., Sciarrino, F., Cuevas, A., Mataloni, P., "Experimental investigation of superdiffusion via coherent disordered Quantum Walks", Physical review letters, 123(14), 140501, (2019)
- 2019 **Geraldi, A.**, Bonavena, L. D., Liorni, C., Mataloni, P., Cuevas, A., "A Novel Bulk Optics Scheme for Quantum Walk with High Phase Stability" Condensed Matter, 4(1), 14 (2019).
- 2019 Ciampini, M. A., **Geraldi, A.**, Cimini, V., Macchiavello, C., Sipe, J. E., Liscidini, M., and Mataloni, P., "Stimulated emission tomography: beyond polarization" Opt. Lett. 44, 41-44 (2019)
- 2019 Cuevas, A., **Geraldi, A.**, Liorni, C., Bonavena, L. D., De Pasquale, A., Sciarrino, F., Giovannetti, V., Mataloni, P. "All-optical implementation of collision-based evolutions of open quantum systems" Scientific reports, 9(1), 3205 (2019)

Scientific Oral Communications

- September Accepted at IMEKO TC-4 2020, Palermo, Italy.
2020 Title: *Experimental investigation of anomalous diffusion via coherent disordered Quantum Walks*
- May 2019 Quantum 2019 - From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology Sensing, Turin, Italy.
Title: *Experimental Realization of an Innovative Phase-Stable Bulk-Optic Scheme for Quantum Walks*
- May 2018 CLEO-laser science to photonic application in San Jose', California, USA.
Title: *Stimulated emission tomography of Hyperentangled states*
- Feb 2018 6th International Symposium on Optics and its Applications (Optics 2018) in Trento, Italy.
Title: *Stimulated emission tomography of Hyperentangled states*

Scientific Poster Presentations

- September 2019 Causality in the quantum world: harnessing quantum effects in causal inference problems, Anacapri, Italy.
Title: *Experimental study of superdiffusive behaviour in all-optical Quantum Walks*
- June 2019 26th Central European Workshop on Quantum Optics, Paderborn, Germany.
Title: *Experimental realization of an innovative Phase-Stable Bulk-Optic scheme for Quantum Walks*
- May 2019 Quantum 2019 - From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology Sensing, Turin, Italy.
Title: *All-Optical Implementation of Collision Based Evolutions of Open Quantum Systems*
- April 2019 Quantum Information and Measurement (QIM) V: Quantum Technologies, OSA Technical Digest (Optical Society of America, 2019), Rome, Italy.
Title: *Experimental Realization of an Innovative Phase-Stable Bulk-Optic Scheme for Quantum Walks*

Computer skills

- Programming Major experience: C, Python, Mathematica, Bash
- languages Minor experience: Matlab, Octave
- VCS Git, GitHub, GitLab
- OS ArchLinux, Manjaro, Ubuntu, Windows, Macintosh

Languages

- Italian Mother tongue
- English Intermediate, Conversationally fluent