

Nicolò Spagnolo - Full list of publications

Refereed Journals

- [1] N. Spagnolo, C. Vitelli, S. Giacomini, F. Sciarrino, and F. De Martini, Polarization preserving ultra-fast optical shutter for quantum information processing, *Opt. Expr.* 16, 17609 (2008).
- [2] F. De Martini, F. Sciarrino, N. Spagnolo, C. Vitelli, and F. S. Cataliotti, Macroscopic quantum entanglement in light reflection from Bose-Einstein condensates, *Int. Journ. Quant. Inform.* 7, 171 (2009).
- [3] C. Vitelli, N. Spagnolo, F. Sciarrino, and F. De Martini, Amplification of polarization NOON states, *JOSA B* 26, 892 (2009).
- [4] F. De Martini, F. Sciarrino, and N. Spagnolo, Decoherence, environment-induced superselection, and classicality of a macroscopic quantum superposition generated by quantum cloning, *Phys. Rev. A* 79, 052305 (2009).
- [5] F. De Martini, F. Sciarrino, and N. Spagnolo, Anomalous Lack of Decoherence of the Macroscopic Quantum Superpositions based on Phase-Covariant Quantum Cloning, *Phys. Rev. Lett.* 103, 100501 (2009).
- [6] N. Spagnolo, C. Vitelli, T. De Angelis, F. Sciarrino, and F. De Martini, Wigner function theory and decoherence of the quantum-injected optical parametric amplifier, *Phys. Rev. A* 80, 032318 (2009), IF:2.808.
- [7] C. Vitelli, N. Spagnolo, L. Toffoli, F. Sciarrino, and F. De Martini, Quantum-to-classical transition via fuzzy measurements on high gain spontaneous parametric down-conversion, *Phys. Rev. A* 81, 032123 (2010).
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- [9] C. Vitelli, N. Spagnolo, L. Toffoli, F. Sciarrino, F. De Martini, Enhanced Resolution of Lossy Interferometry by Coherent Amplification of Single Photons, *Phys. Rev. Lett.* 105, 113602 (2010).
- [10] N. Spagnolo, F. Sciarrino, F. De Martini, Resilience to decoherence of the macroscopic quantum superpositions generated by universally covariant optimal quantum cloning, *Phys. Rev. A* 82, 032325 (2010).
- [11] N. Spagnolo, C. Vitelli, F. Sciarrino, and F. De Martini, Entanglement criteria for microscopic-macroscopic systems, *Phys. Rev. A* 82, 052101 (2010).
- [12] C. Vitelli, N. Spagnolo, F. Sciarrino, and F. De Martini, Measurement-induced quantum operations on multiphoton states, *Phys. Rev. A* 82, 062319 (2010).
- [13] M. Barbieri, N. Spagnolo, M. G. Genoni, F. Ferreyrol, R. Blandino, M. G. A. Paris, P. Grangier, and R. Tualle-Brouri, Non-Gaussianity of quantum states: An experimental test on single-photon-added coherent states', *Phys. Rev. A* 82, 063833 (2010).
- [14] F. Caruso, N. Spagnolo, C. Vitelli, F. Sciarrino, and M. B. Plenio, Simulation of noise-assisted transport via optical cavity networks, *Phys. Rev. A* 83, 013811 (2011).
- [15] N. Spagnolo, C. Vitelli, M. Paternostro, F. De Martini, and F. Sciarrino, Hybrid methods for witnessing entanglement in a microscopic-macroscopic system, *Phys. Rev. A* 84, 032102 (2011).
- [16] C. Vitelli, M. Terra-Cunha, N. Spagnolo, F. De Martini, F. Sciarrino, Continuous-variable nonlocality test performed over a multiphoton quantum state, *Phys. Rev. A* 85, 012104 (2012).
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- [18] N. Spagnolo, L. Aparo, C. Vitelli, A. Crespi, R. Ramponi, R. Osellame, P. Mataloni and F. Sciarrino, Quantum interferometry with three-dimensional geometry, *Sci. Rep.* 2, 862 (2012).
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- [21] C. Vitelli, N. Spagnolo, L. Aparo, F. Sciarrino, E. Santamato and L. Marrucci, Joining the quantum state of two photons into one, *Nature Photonics* 7, 521 (2013).
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- [22] A. Crespi, R. Osellame, R. Ramponi, D. J. Brod, E. F. Galvao, N. Spagnolo, C. Vitelli, E. Maiorino, P. Mataloni, and F. Sciarrino, Integrated multimode interferometers with arbitrary designs for photonic boson sampling, *Nature Photonics* 7, 545 (2013).
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- [23] V. D'Ambrosio, N. Spagnolo, L. Del Re, S. Slussarenko, Y. Li, L. C. Kwek, L. Marrucci, S. P. Walborn, L. Aolita, and F. Sciarrino, Photonic polarization gears for ultra-sensitive angular measurements, *Nature Communications* 4, 2432 (2013).
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- [26] N. Spagnolo, C. Vitelli, M. Bentivegna, D. J. Brod, A. Crespi, F. Flamini, S. Giacomini, G. Milani, R. Ramponi, P. Mataloni, R. Osellame, E. F. Galvao, and F. Sciarrino, Experimental validation of photonic boson sampling, *Nature Photonics* 8, 615 (2014).
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- [28] M. Bentivegna, N. Spagnolo, C. Vitelli, F. Flamini, N. Viggianiello, L. Latmiral, P. Mataloni, D. J. Brod, E. F. Galvao, A. Crespi, R. Ramponi, R. Osellame, and F. Sciarrino, Experimental scattershot boson sampling, *Science Advances* 1, e1400255 (2015).
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- [31] A. Crespi, R. Osellame, R. Ramponi, M. Bentivegna, F. Flamini, N. Spagnolo, N. Viggianiello, L. Innocenti, P. Mataloni, F. Sciarrino, Suppression law of quantum states in a 3D photonic fast Fourier transform chip, *Nature Communications* 7, 10469 (2016).
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- [33] L. Latmiral, N. Spagnolo, F. Sciarrino, Towards quantum supremacy with lossy scattershot boson sampling, *New J. Phys.* 18, 113008 (2016).
- [34] F. Flamini, N. Viggianiello, M. Bentivegna, N. Spagnolo, P. Mataloni, A. Crespi, R. Ramponi, R. Osellame, and F. Sciarrino, Generalized quantum fast transformations via femtosecond laser writing technique, *Interdisciplinary Information Sciences* 23, 115 (2017).
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- [36] A. S. Rab, E. Polino, Z.-X. Man, N. Ba An, Y.-J. Xia, N. Spagnolo, R. Lo Franco, F. Sciarrino, Entanglement of photons in their dual wave-particle nature, *Nature Communications* 8, 915 (2017).

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- [39] I. Pitsios, L. Banchi, A. S. Rab, M. Bentivegna, D. Caprara, A. Crespi, N. Spagnolo, S. Bose, P. Mataloni, R. Osellame, F. Sciarrino, Photonic simulation of entanglement growth and engineering after a spin chain quench, *Nature Communications* 8, 1569 (2017).
- [40] L. Innocenti, H. Majury, T. Giordani, N. Spagnolo, F. Sciarrino, M. Paternostro, A. Ferraro, Quantum state engineering using one-dimensional discrete-time quantum walk, *Phys. Rev. A* 96, 062326 (2017).
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- [45] I. Gianani, E. Polino, M. Sbroscia, A. S. Rab, E. Roccia, L. Mancino, N. Spagnolo, M. Barbieri, F. Sciarrino, Hong-Ou-Mandel control through spectral shaping, *Journal of Optics* 20, 085201 (2018).
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- [46] A. Lumino, E. Polino, A. S. Rab, G. Milani, N. Spagnolo, N. Wiebe, F. Sciarrino, Experimental Phase Estimation Enhanced by Machine Learning, *Physical Review Applied* 10, 044033 (2018).
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- [47] N. Viggianiello, F. Flamini, M. Bentivegna, N. Spagnolo, A. Crespi, D. J. Brod, E. F. Galvao, R. Osellame, F. Sciarrino, Optimal photonic indistinguishability tests in multimode networks, *Science Bulletin* 63, 1470-1478 (2018).
- [48] F. Flamini, N. Spagnolo, F. Sciarrino, Photonic quantum information processing: a review, *Reports on Progress in Physics* 82, 016001 (2019).
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- [51] D. J. Brod, E. F. Galvao, N. Viggianiello, F. Flamini, N. Spagnolo, F. Sciarrino, Witnessing Genuine Multiphoton Indistinguishability, *Physical Review Letters* 122, 063602 (2019).
- [52] E. Polino, M. Riva, M. Valeri, R. Silvestri, G. Corrielli, A. Crespi, N. Spagnolo, R. Osellame, F. Sciarrino, Experimental multiphase estimation on a chip, *Optica* 6, 288-295 (2019).
- [53] F. Flamini, N. Spagnolo, F. Sciarrino, Visual assessment of multi-photon interference, *Quantum Science and Technology* 4, 024008 (2019).
- [54] D. J. Brod, E. F. Galvao, A. Crespi, R. Osellame, N. Spagnolo, F. Sciarrino, Photonic implementation of boson sampling: a review, *Advanced Photonics* 1, 034001 (2019).

[55] D. Cozzolino, E. Polino, M. Valeri, G. Carvacho, D. Bacco, N. Spagnolo, L. K. Oxenløwe, F. Sciarrino, Air-core fiber distribution of hybrid vector vortex-polarization entangled states, *Adv. Phot.* 1, 046005 (2019).

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Conference Proceedings

- [CP1] F. S. Cataliotti, F. De Martini, F. Sciarrino, N. Spagnolo, and C. Vitelli, Macroscopic quantum entanglement, *Proc. SPIE* 7092, 7092T (2008).
- [CP2] C. Vitelli, N. Spagnolo, F. Sciarrino, and F. De Martini, Non Locality in a Micro-Macroscopic Photon System, *AIP Conf. Proc.* 1101, 29 (2009).
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- [CP4] C. Vitelli, N. Spagnolo, F. Sciarrino, and F. De Martini, Micro-macro entangled photon systems: results and perspectives, *Proc. SPIE* 7355, 735508 (2009).
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- [CP7] N. Spagnolo, C. Vitelli, L. Toffoli, F. Sciarrino, F. De Martini, Quantum-to-classical transition via fuzzy measurements on high gain spontaneous parametric down-conversion, *AIP Conf. Proc.* 1363, 193 (2011).
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- [CP14] N. Spagnolo, A. Lumino, E. Polino, A. S. Rab, N. Wiebe, F. Sciarrino, Machine Learning for Quantum Metrology, *Proceedings* 12, 28 (2019).

Other publications

- [O1] L. Marrucci, C. Vitelli, N. Spagnolo, F. Sciarrino, Quantum multiplexing in single photons, *SPIE Newsroom* (2013), DOI: 10.1117/2.1201308.005020.
- [O2] L. Sansoni, N. Spagnolo, C. Vitelli, F. Sciarrino, P. Mataloni, Simulating quantum physics by integrated photonic circuits, *Il Nuovo Saggiatore* Vol.29, No. 5-6, p. 5-16 (2013).

[O3] M. Bentivegna, N. Spagnolo, F. Sciarrino, Is my boson sampler working?, *New J. Phys.* 18, 041001 (2016)

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