Valerio Scarani

List of Publications by Year
in descending order

163 papers	15,804 citations	28190 55 h-index	17055 122 g-index
166 all docs	166 docs citations	166 times ranked	5967 citing authors

#	Article	IF	Citations
1	The security of practical quantum key distribution. Reviews of Modern Physics, 2009, 81, 1301-1350.	16.4	2,489
2	Bell nonlocality. Reviews of Modern Physics, 2014, 86, 419-478.	16.4	1,792
3	Device-Independent Security of Quantum Cryptography against Collective Attacks. Physical Review Letters, 2007, 98, 230501.	2.9	1,221
4	Quantum Cryptography Protocols Robust against Photon Number Splitting Attacks for Weak Laser Pulse Implementations. Physical Review Letters, 2004, 92, 057901.	2.9	582
5	One-sided device-independent quantum key distribution: Security, feasibility, and the connection with steering. Physical Review A, 2012, 85, .	1.0	564
6	Information causality as a physical principle. Nature, 2009, 461, 1101-1104.	13.7	545
7	Quantum cloning. Reviews of Modern Physics, 2005, 77, 1225-1256.	16.4	482
8	Device-independent quantum key distribution secure against collective attacks. New Journal of Physics, 2009, 11, 045021.	1.2	379
9	Bell-Type Inequalities to Detect Truen-Body Nonseparability. Physical Review Letters, 2002, 88, 170405.	2.9	252
10	Quantum Cryptography with Finite Resources: Unconditional Security Bound for Discrete-Variable Protocols with One-Way Postprocessing. Physical Review Letters, 2008, 100, 200501.	2.9	249
11	Thermalizing Quantum Machines: Dissipation and Entanglement. Physical Review Letters, 2002, 88, 097905.	2.9	237
12	Fast and simple one-way quantum key distribution. Applied Physics Letters, 2005, 87, 194108.	1.5	229
13	Entangling independent photons by timeÂmeasurement. Nature Physics, 2007, 3, 692-695.	6.5	221
14	Testing the Dimension of Hilbert Spaces. Physical Review Letters, 2008, 100, 210503.	2.9	208
15	Quantum Communication betweenNPartners and Bell's Inequalities. Physical Review Letters, 2001, 87, 117901.	2.9	202
16	Security proof for quantum key distribution using qudit systems. Physical Review A, 2010, 82, .	1.0	186
17	Direct Measurement of Superluminal Group Velocity and Signal Velocity in an Optical Fiber. Physical Review Letters, 2004, 93, 203902.	2.9	179
18	Ultrafast Quantum Gates in Circuit QED. Physical Review Letters, 2012, 108, 120501.	2.9	170

#	Article	IF	Citations
19	Reference-frame-independent quantum key distribution. Physical Review A, 2010, 82, .	1.0	163
20	Quantum absorption refrigerator with trapped ions. Nature Communications, 2019, 10, 202.	5.8	157
21	Experimentally Faking the Violation of Bellâ€™s Inequalities. Physical Review Letters, 2011, 107, 170404.	2.9	153
22	Nonlocality of cluster states of qubits. Physical Review A, 2005, 71, .	1.0	148
23	Bell correlations in a Bose-Einstein condensate. Science, 2016, 352, 441-444.	6.0	141
24	Robust self-testing of the singlet. Journal of Physics A: Mathematical and Theoretical, 2012, 45, 455304.	0.7	128
25	All pure bipartite entangled states can be self-tested. Nature Communications, 2017, 8, 15485.	5.8	122
26	Spectral decomposition of Bell's operators for qubits. Journal of Physics A, 2001, 34, 6043-6053.	1.6	109
27	Finite-key analysis for practical implementations of quantum key distribution. New Journal of Physics, 2009, 11, 045024.	1.2	108
28	Coherent-pulse implementations of quantum cryptography protocols resistant to photon-number-splitting attacks. Physical Review A, 2004, 69, .	1.0	100
29	Security of two quantum cryptography protocols using the same four qubit states. Physical Review A, 2005, 72, .	1.0	98
30	Entanglement and non-locality are different resources. New Journal of Physics, 2005, 7, 88-88.	1.2	97
31	Robust and Versatile Black-Box Certification of Quantum Devices. Physical Review Letters, 2014, 113, 040401.	2.9	96
32	Detection Loophole in Asymmetric Bell Experiments. Physical Review Letters, 2007, 98, 220403.	2.9	95
33	Quantum networks reveal quantum nonlocality. Nature Communications, 2011, 2, 184.	5.8	93
34	Quantum non-locality based on finite-speed causal influences leads to superluminal signalling. Nature Physics, 2012, 8, 867-870.	6.5	93
35	Efficient excitation of a two-level atom by a single photon in a propagating mode. Physical Review A, 2011, 83, .	1.0	92
36	Quantum randomness extraction for various levels of characterization of the devices. Journal of Physics A: Mathematical and Theoretical, 2014, 47, 424028.	0.7	92

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37	Device-independent state estimation based on Bellâ€™s inequalities. Physical Review A, 2009, 80, .	1.0	91
38	Tailoring photonic entanglement in high-dimensional Hilbert spaces. Physical Review A, 2004, 69, .	1.0	87
39	Bell Nonlocality. , 2019, , .		85
40	Quantum Cloning with an Optical Fiber Amplifier. Physical Review Letters, 2002, 89, 107901.	2.9	84
41	Experimental Falsification of Leggettâ€™s Nonlocal Variable Model. Physical Review Letters, 2007, 99, 210407.	2.9	84
42	Fidelity of an Optical Memory Based on Stimulated Photon Echoes. Physical Review Letters, 2007, 98, 113601.	2.9	80
43	Testing quantum correlations versus single-particle properties within Leggettâ€™sÂmodel and beyond. Nature Physics, 2008, 4, 681-685.	6.5	80
44	Secrecy extraction from no-signaling correlations. Physical Review A, 2006, 74, .	1.0	76
45	Two independent photon pairs versus four-photon entangled states in parametric down conversion. Journal of Modern Optics, 2004, 51, 1637-1649.	0.6	75
46	Optical Telecom Networks as Weak Quantum Measurements with Postselection. Physical Review Letters, 2003, 91, 180402.	2.9	73
47	Geometry of the set of quantum correlations. Physical Review A, 2018, 97, .	1.0	71
48	Phase Shift of a Weak Coherent Beam Induced by a Single Atom. Physical Review Letters, 2009, 103, 153601.	2.9	69
49	More randomness from the same data. New Journal of Physics, 2014, 16, 033011.	1.2	67
50	Recovering part of the boundary between quantum and nonquantum correlations from information causality. Physical Review A, 2009, 80, .	1.0	63
51	Physical characterization of quantum devices from nonlocal correlations. Physical Review A, 2015, 91, .	1.0	62
52	Device-Independent Certification of Entangled Measurements. Physical Review Letters, 2011, 107, 050502.	2.9	61
53	Does entanglement depend on the timing of the impacts at the beam-splitters?. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 232, 9-14.	0.9	60
54	The speed of quantum information and the preferred frame: analysis of experimental data. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 276, 1-7.	0.9	59

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55	Extremal correlations of the tripartite no-signaling polytope. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 065303.	0.7	59
56	Autonomous rotor heat engine. Physical Review E, 2017, 95, 062131.	0.8	59
57	Interfacing light and single atoms with a lens. New Journal of Physics, 2009, 11, 043011.	1.2	57
58	Collisional Quantum Thermometry. Physical Review Letters, 2019, 123, 180602.	2.9	56
59	Quantum key distribution betweenNpartners: Optimal eavesdropping and Bellâ€™s inequalities. Physical Review A, 2001, 65, .	1.0	55
60	Upper bounds for the security of two distributed-phase reference protocols of quantum cryptography. New Journal of Physics, 2008, 10, 013031.	1.2	55
61	The black paper of quantum cryptography: Real implementation problems. Theoretical Computer Science, 2014, 560, 27-32.	0.5	53
62	Robust self-testing of the three-qubit<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>W</mml:mi></mml:math>state. Physical Review A, 2014, 90, .	1.0	53
63	Publisherâ€™s Note: Bell nonlocality [Rev. Mod. Phys.86, 419 (2014)]. Reviews of Modern Physics, 2014, 86, 839-840.	16.4	53
64	The microstructure of electrodeposited cobalt-based nanowires and its effect on their magnetic and transport properties. Journal of Magnetism and Magnetic Materials, 1999, 205, 241-248.	1.0	50
65	Device-Independent Bounds for Hardyâ€™s Experiment. Physical Review Letters, 2012, 109, 180401.	2.9	50
66	Excitation of a Single Atom with Exponentially Rising Light Pulses. Physical Review Letters, 2013, 111, 103001.	2.9	50
67	Device-independent quantum key distribution with random key basis. Nature Communications, 2021, 12, 2880.	5.8	49
68	Finite-key security against coherent attacks in quantum key distribution. New Journal of Physics, 2010, 12, 123019.	1.2	48
69	Effects of Reduced Measurement Independence on Bell-Based Randomness Expansion. Physical Review Letters, 2012, 109, 160404.	2.9	47
70	Device-independent parallel self-testing of two singlets. Physical Review A, 2016, 93, .	1.0	47
71	Refrigeration beyond weak internal coupling. Physical Review E, 2018, 98, 012131.	0.8	43
72	All the self-testings of the singlet for two binary measurements. New Journal of Physics, 2016, 18, 025021.	1.2	41

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73	Work production of quantum rotor engines. New Journal of Physics, 2018, 20, 043045.	1.2	40
74	Four-photon correction in two-photon Bell experiments. European Physical Journal D, 2005, 32, 129-138.	0.6	39
75	Rabi oscillation in a quantum cavity: Markovian and non-Markovian dynamics. Physical Review A, 2016, 93, .	1.0	39
76	Randomness Extraction from Bell Violation with Continuous Parametric Down-Conversion. Physical Review Letters, 2018, 121, 150402.	2.9	39
77	Nonequilibrium dynamics with finite-time repeated interactions. Physical Review E, 2019, 99, 042103.	0.8	38
78	Experimental quantum key distribution based on a Bell test. Physical Review A, 2008, 78, .	1.0	37
79	Photon-number-splitting versus cloning attacks in practical implementations of the Bennett-Brassard 1984 protocol for quantum cryptography. Physical Review A, 2005, 71, .	1.0	31
80	Solving the scattering ofNphotons on a two-level atom without computation. New Journal of Physics, 2016, 18, 093035.	1.2	30
81	BELL'S INEQUALITIES DETECT EFFICIENT ENTANGLEMENT. International Journal of Quantum Information, 2004, 02, 23-31.	0.6	29
82	Multipartite fully nonlocal quantum states. Physical Review A, 2010, 81, .	1.0	29
83	Large violation of Bell inequalities using both particle andwave measurements. Physical Review A, 2011, 84, .	1.0	29
84	Information-causality and extremal tripartite correlations. New Journal of Physics, 2012, 14, 013061.	1.2	28
85	Macroscopically local correlations can violate information causality. Nature Communications, 2010, 1, 136.	5.8	27
86	Nonlocality Tests Enhanced by a Third Observer. Physical Review Letters, 2012, 108, 040402.	2.9	27
87	Covert Quantum Communication. Physical Review Letters, 2016, 117, 250503.	2.9	27
88	Witnessing Irreducible Dimension. Physical Review Letters, 2017, 119, 080401.	2.9	27
89	Bellâ€™s inequalities and distillability inN-quantum-bit systems. Physical Review A, 2002, 66, .	1.0	26
90	Focus on device independent quantum information. New Journal of Physics, 2016, 18, 100202.	1.2	26

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91	Bell tests with min-entropy sources. Physical Review A, 2013, 87, .	1.0	25
92	Introducing quantum mechanics: One-particle interferences. American Journal of Physics, 1998, 66, 718-721.	0.3	24
93	Magnetic and transport properties of electrodeposited nanostructured nanowires. IEEE Transactions on Magnetics, 1998, 34, 968-972.	1.2	24
94	Simulation of partial entanglement with nonsignaling resources. Physical Review A, 2008, 78, .	1.0	24
95	Measurement-device-independent quantification of entanglement for given Hilbert space dimension. New Journal of Physics, 2016, 18, 045022.	1.2	24
96	Rectification of light in the quantum regime. Physical Review A, 2015, 92, .	1.0	23
97	Quantum and classical dynamics of a three-mode absorption refrigerator. Quantum - the Open Journal for Quantum Science, 0, 1, 37.	0.0	23
98	Maxwellâ€™s Lesser Demon: A Quantum Engine Driven by Pointer Measurements. Physical Review Letters, 2020, 124, 100603.	2.9	22
99	Cross time-bin photonic entanglement for quantum key distribution. Physical Review A, 2013, 87, .	1.0	20
100	Fluctuation theorems from Bayesian retrodiction. Physical Review E, 2021, 103, 052111.	0.8	20
101	Security Bounds for Quantum Cryptography with Finite Resources. Lecture Notes in Computer Science, 2008, , 83-95.	1.0	19
102	Local and nonlocal content of bipartite qubit and qutrit correlations. Physical Review A, 2008, 77, .	1.0	18
103	Realistic loophole-free Bell test with atomâ€“photon entanglement. Nature Communications, 2013, 4, 2104.	5.8	18
104	Superluminal influences, hidden variables, and signaling. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 295, 167-174.	0.9	16
105	Quantum memory with a single two-level atom in a half cavity. Physical Review A, 2012, 85, .	1.0	16
106	A new device-independent dimension witness and its experimental implementation. Journal of Physics A: Mathematical and Theoretical, 2016, 49, 305301.	0.7	16
107	PSEUDO-TELEPATHY: INPUT CARDINALITY AND BELL-TYPE INEQUALITIES. International Journal of Quantum Information, 2007, 05, 525-534.	0.6	15
108	Fluctuation theorems with retrodiction rather than reverse processes. AVS Quantum Science, 2021, 3, .	1.8	15

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109	Randomness in post-selected events. New Journal of Physics, 2016, 18, 035007.	1.2	14
110	Violation of BellÂs inequalities and distillability forNqubits. Journal of Physics A, 2003, 36, L21-L29.	1.6	13
111	Feats, Features and Failures of the PR-box. AIP Conference Proceedings, 2006, , .	0.3	13
112	TOMOGRAPHIC QUANTUM CRYPTOGRAPHY PROTOCOLS ARE REFERENCE FRAME INDEPENDENT. International Journal of Quantum Information, 2012, 10, 1250035.	0.6	13
113	Two photons on an atomic beam splitter: Nonlinear scattering and induced correlations. Physical Review A, 2016, 93, .	1.0	13
114	Superluminal hidden communication as the underlying mechanism for quantum correlations: constraining models. Brazilian Journal of Physics, 2005, 35, 328.	0.7	12
115	The non-locality ofnnoisy Popescuâ€“Rohrlich boxes. Journal of Physics A: Mathematical and Theoretical, 2010, 43, 465305.	0.7	12
116	Surpassing the thermal CramÃ©r-Rao bound with collisional thermometry. Physical Review A, 2020, 102, .	1.0	11
117	Two independent photon pairs versus four-photon entangled states in parametric down conversion. , 0, .		11
118	59Co nuclear magnetic resonance studies of magnetic excitations in ferromagnetic nanowires. Applied Physics Letters, 2000, 76, 903-905.	1.5	10
119	Local content of bipartite qubit correlations. Physical Review A, 2010, 81, .	1.0	10
120	Quantum Bell inequalities from macroscopic locality. Physical Review A, 2011, 83, .	1.0	10
121	Nonlocal games and optimal steering at the boundary of the quantum set. Physical Review A, 2016, 94, .	1.0	10
122	Lenses as an atomâ€“photon interface: A semiclassical model. Optics Communications, 2011, 284, 4485-4490.	1.0	9
123	Strong Constraints on Models that Explain the Violation of Bell Inequalities with Hidden Superluminal Influences. Foundations of Physics, 2014, 44, 523-531.	0.6	9
124	Proposal for Energy-Time Entanglement of Quasiparticles in a Solid-State Device. Physical Review Letters, 2004, 92, 167901.	2.9	8
125	Bell-type inequalities for nonlocal resources. Journal of Mathematical Physics, 2006, 47, 112101.	0.5	8
126	State-dependent atomic excitation by multiphoton pulses propagating along two spatial modes. Physical Review A, 2012, 86, .	1.0	8

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127	Device-independent certification of the teleportation of a qubit. Physical Review A, 2013, 88, .	1.0	8
128	State complexity and quantum computation. Annalen Der Physik, 2015, 527, 684-700.	0.9	8
129	Power of an optical Maxwell's demon in the presence of photon-number correlations. Physical Review A, 2017, 95, .	1.0	8
130	Experimental comparison of tomography and self-testing in certifying entanglement. Physical Review A, 2019, 100, .	1.0	8
131	Extension of the Alberti-Ulhmann criterion beyond qubit dichotomies. Quantum - the Open Journal for Quantum Science, 0, 4, 233.	0.0	7
132	Guaranteed randomness. Nature, 2010, 464, 988-989.	13.7	6
133	Comment on â€œLoophole-Free Bell Test for Continuous Variables via Wave and Particle Correlationsâ€. Physical Review Letters, 2011, 106, 208901; author reply 208902.	2.9	6
134	Validity of resonant two-qubit gates in the ultrastrong coupling regime of circuit quantum electrodynamics. Physica Scripta, 2012, T147, 014031.	1.2	6
135	Many-box locality. Physical Review A, 2017, 96, .	1.0	6
136	Self-testing using only marginal information. Physical Review A, 2018, 98, .	1.0	6
137	Evaluation of two different entanglement measures on a bound entangled state. Physical Review A, 2010, 82, .	1.0	5
138	Time-bin entanglement of quasiparticles in semiconductor devices. Physical Review B, 2011, 84, .	1.1	5
139	Oblivious transfer and quantum channels as communication resources. Natural Computing, 2013, 12, 13-17.	1.8	4
140	Measurement-dependent locality beyond independent and identically distributed runs. Physical Review A, 2016, 94, .	1.0	4
141	Experimental many-pairs nonlocality. Physical Review A, 2017, 96, .	1.0	4
142	Almost thermal operations: Inhomogeneous reservoirs. Physical Review A, 2019, 100, .	1.0	4
143	Quantum gears from planar rotors. Physical Review E, 2019, 99, 042202.	0.8	4
144	Entanglement and irreversibility in the approach to thermal equilibrium. European Physical Journal: Special Topics, 2007, 151, 41-49.	1.2	3

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145	Reply to â€œLorentz and CPT invariances and the EPR correlationsâ€•by Costa de Beauregard. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 236, 605-606.	0.9	2
146	Finite-key analysis for practical implementations of quantum key distribution. New Journal of Physics, 2009, 11, 109801-109801.	1.2	2
147	Analysis of a proposal for a realistic loophole-free Bell test with atom-light entanglement. Physical Review A, 2013, 88, .	1.0	2
148	Maximal tree size of few-qubit states. Physical Review A, 2014, 89, .	1.0	2
149	Proposal for monitoring and heralding position states of atoms in a one-dimensional waveguide. Physical Review A, 2014, 90, .	1.0	2
150	Knowledge by direct measurement versus inference from steering. Quantum Studies: Mathematics and Foundations, 2020, 7, 247-254.	0.4	2
151	Entanglement for any definition of two subsystems. Physical Review A, 2021, 103, .	1.0	2
152	Worst-case Quantum Hypothesis Testing with Separable Measurements. Quantum - the Open Journal for Quantum Science, 0, 4, 320.	0.0	2
153	Effect of oxidation of cobalt-based nanowires on NMR spin-lattice relaxation. Applied Magnetic Resonance, 2000, 19, 439-445.	0.6	1
154	Oblivious Transfer and Quantum Channels. , 0, , .		1
155	Tree-size complexity of multiqubit states. Physical Review A, 2013, 88, .	1.0	1
156	How Non-Local are n Noisy Popescu-Rohrlich Machines?. , 2009, , .		0
157	Excitation of a single atom with a temporally shaped light pulses. , 2013, , .		0
158	Publisher's Note: Nonlocal games and optimal steering at the boundary of the quantum set [Phys. Rev. A94, 022116 (2016)]. Physical Review A, 2016, 94, .	1.0	0
159	Quantum Rotor Engines. Fundamental Theories of Physics, 2018, , 227-245.	0.1	0
160	Optimal single-shot discrimination of optical modes. Physical Review A, 2021, 103, .	1.0	0
161	Absolutely entangled sets of pure states for bipartitions and multipartitions. Physical Review A, 2021, 104, .	1.0	0
162	The Universe Would Not Be Perfect Without Randomness: A Quantum Physicistâ€™s Reading of Aquinas. The Frontiers Collection, 2017, , 167-174.	0.1	0

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163	Randomness extraction from CHSH violation without fair sampling assumptions with a continuous wave source. , 2018, , .		0