

Nicolas Brunner

List of Publications by Year in descending order

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154
papers

12,128
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28274

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154
docs citations

154
times ranked

4251
citing authors

#	ARTICLE	IF	CITATIONS
1	Genuine network quantum nonlocality and self-testing. <i>Physical Review A</i> , 2022, 105, .	2.5	21
2	Receiver-device-independent quantum key distribution protocols. <i>New Journal of Physics</i> , 2022, 24, 063006.	2.9	4
3	Quantum measurement incompatibility in subspaces. <i>Physical Review A</i> , 2021, 103, .	2.5	7
4	Genuine High-Dimensional Quantum Steering. <i>Physical Review Letters</i> , 2021, 126, 200404.	7.8	39
5	Entanglement for any definition of two subsystems. <i>Physical Review A</i> , 2021, 103, .	2.5	2
6	Quantum entanglement in the triangle network. <i>Physical Review A</i> , 2021, 103, .	2.5	25
7	Set Coherence: Basis-Independent Quantification of Quantum Coherence. <i>Physical Review Letters</i> , 2021, 126, 220404.	7.8	24
8	Quantum Speed-Up in Collisional Battery Charging. <i>Physical Review Letters</i> , 2021, 127, 100601.	7.8	37
9	Absolutely entangled sets of pure states for bipartitions and multipartitions. <i>Physical Review A</i> , 2021, 104, .	2.5	0
10	Network Quantum Steering. <i>Physical Review Letters</i> , 2021, 127, 170405.	7.8	22
11	High-speed batch processing of semidefinite programs with feedforward neural networks. <i>New Journal of Physics</i> , 2021, 23, 103034.	2.9	2
12	Experimental relativistic zero-knowledge proofs. <i>Nature</i> , 2021, 599, 47-50.	27.8	9
13	Signatures of Liouvillian Exceptional Points in a Quantum Thermal Machine. <i>PRX Quantum</i> , 2021, 2, .	9.2	20
14	A neural network oracle for quantum nonlocality problems in networks. <i>Npj Quantum Information</i> , 2020, 6, .	6.7	33
15	All Quantum Resources Provide an Advantage in Exclusion Tasks. <i>Physical Review Letters</i> , 2020, 125, 110402.	7.8	30
16	Quantum Nonlocality in Networks Can Be Demonstrated with an Arbitrarily Small Level of Independence between the Sources. <i>Physical Review Letters</i> , 2020, 125, 240403.	7.8	22
17	Constraints on nonlocality in networks from no-signaling and independence. <i>Nature Communications</i> , 2020, 11, 2378.	12.8	45
18	Self-testing nonprojective quantum measurements in prepare-and-measure experiments. <i>Science Advances</i> , 2020, 6, eaaw6664.	10.3	45

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19	Critical heat current for operating an entanglement engine. <i>New Journal of Physics</i> , 2020, 22, 073039.	2.9	26
20	Autonomous multipartite entanglement engines. <i>Physical Review A</i> , 2020, 101, .	2.5	21
21	Hybrid thermal machines: Generalized thermodynamic resources for multitasking. <i>Physical Review Research</i> , 2020, 2, .	3.6	27
22	Limits on Correlations in Networks for Quantum and No-Signaling Resources. <i>Physical Review Letters</i> , 2019, 123, 070403.	7.8	35
23	Semi-device-independent characterization of quantum measurements under a minimum overlap assumption. <i>Physical Review A</i> , 2019, 100, .	2.5	8
24	Unifying paradigms of quantum refrigeration: Fundamental limits of cooling and associated work costs. <i>Physical Review E</i> , 2019, 100, 042130.	2.1	19
25	Unifying Paradigms of Quantum Refrigeration: A Universal and Attainable Bound on Cooling. <i>Physical Review Letters</i> , 2019, 123, 170605.	7.8	38
26	Sequential random access codes and self-testing of quantum measurement instruments. <i>New Journal of Physics</i> , 2019, 21, 083034.	2.9	50
27	Genuine Quantum Nonlocality in the Triangle Network. <i>Physical Review Letters</i> , 2019, 123, 140401.	7.8	106
28	Upper bound on certifiable randomness from a quantum black-box device. <i>Physical Review A</i> , 2019, 99, .	2.5	7
29	Does large quantum Fisher information imply Bell correlations?. <i>Physical Review A</i> , 2019, 99, .	2.5	18
30	Unbounded sequence of observers exhibiting Einstein-Podolsky-Rosen steering. <i>Physical Review A</i> , 2019, 99, .	2.5	42
31	Characterizing Genuine Multilevel Entanglement. <i>Physical Review Letters</i> , 2018, 120, 060502.	7.8	40
32	Quantum measurement incompatibility does not imply Bell nonlocality. <i>Physical Review A</i> , 2018, 97, .	2.5	31
33	Semi-device-independent characterization of multipartite entanglement of states and measurements. <i>Physical Review A</i> , 2018, 98, .	2.5	17
34	Self-Testing Entangled Measurements in Quantum Networks. <i>Physical Review Letters</i> , 2018, 121, 250507.	7.8	41
35	Self-testing quantum states and measurements in the prepare-and-measure scenario. <i>Physical Review A</i> , 2018, 98, .	2.5	75
36	Tight steering inequalities from generalized entropic uncertainty relations. <i>Physical Review A</i> , 2018, 98, .	2.5	34

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37	Optimal work extraction from quantum states by photo-assisted Cooper pair tunneling. Quantum Science and Technology, 2018, 3, 035014.	5.8	30
38	Algorithmic construction of local models for entangled quantum states: Optimization for two-qubit states. Physical Review A, 2018, 98, .	2.5	14
39	Quantifying Photonic High-Dimensional Entanglement. Physical Review Letters, 2017, 118, 110501.	7.8	90
40	Quantification of multidimensional entanglement stored in a crystal. Physical Review A, 2017, 96, .	2.5	32
41	Experimental certification of millions of genuinely entangled atoms in a solid. Nature Communications, 2017, 8, 907.	12.8	27
42	All entangled pure quantum states violate the bilocality inequality. Physical Review A, 2017, 96, .	2.5	67
43	Quantum Thermal Machine as a Thermometer. Physical Review Letters, 2017, 119, 090603.	7.8	78
44	Megahertz-Rate Semi-Device-Independent Quantum Random Number Generators Based on Unambiguous State Discrimination. Physical Review Applied, 2017, 7, .	3.8	72
45	Correlations in star networks: from Bell inequalities to network inequalities. New Journal of Physics, 2017, 19, 073003.	2.9	38
46	Autonomous Quantum Clocks: Does Thermodynamics Limit Our Ability to Measure Time?. Physical Review X, 2017, 7, .	8.9	78
47	Connecting processes with indefinite causal order and multi-time quantum states. New Journal of Physics, 2017, 19, 103022.	2.9	24
48	Markovian master equations for quantum thermal machines: local versus global approach. New Journal of Physics, 2017, 19, 123037.	2.9	187
49	Covariance Bell inequalities. Physical Review A, 2017, 96, .	2.5	16
50	Superactivation of quantum steering. Physical Review A, 2016, 94, .	2.5	25
51	Temporal Multimode Storage of Entangled Photon Pairs. Physical Review Letters, 2016, 117, 240506.	7.8	30
52	Classical communication cost of quantum steering. Physical Review A, 2016, 94, .	2.5	16
53	Performance of autonomous quantum thermal machines: Hilbert space dimension as a thermodynamical resource. Physical Review E, 2016, 94, 032120.	2.1	50
54	Sufficient criterion for guaranteeing that a two-qubit state is unsteerable. Physical Review A, 2016, 93, .	2.5	98

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55	Incompatible quantum measurements admitting a local-hidden-variable model. <i>Physical Review A</i> , 2016, 93, .	2.5	17
56	Nonlinear Bell Inequalities Tailored for Quantum Networks. <i>Physical Review Letters</i> , 2016, 116, 010403.	7.8	101
57	Genuinely Multipartite Entangled Quantum States with Fully Local Hidden Variable Models and Hidden Multipartite Nonlocality. <i>Physical Review Letters</i> , 2016, 116, 130401.	7.8	49
58	Algorithmic Construction of Local Hidden Variable Models for Entangled Quantum States. <i>Physical Review Letters</i> , 2016, 117, 190402.	7.8	55
59	Autonomous quantum refrigerator in a circuit QED architecture based on a Josephson junction. <i>Physical Review B</i> , 2016, 94, .	3.2	95
60	Entanglement without hidden nonlocality. <i>New Journal of Physics</i> , 2016, 18, 113019.	2.9	16
61	Guess Your Neighbour's Input: No Quantum Advantage but an Advantage for Quantum Theory. <i>Fundamental Theories of Physics</i> , 2016, , 465-496.	0.3	2
62	Testing dimension and nonclassicality in communication networks. <i>Physical Review A</i> , 2015, 92, .	2.5	24
63	Small quantum absorption refrigerator with reversed couplings. <i>Physical Review E</i> , 2015, 92, 012136.	2.1	33
64	Small quantum absorption refrigerator in the transient regime: Time scales, enhanced cooling, and entanglement. <i>Physical Review E</i> , 2015, 92, 062101.	2.1	79
65	Device-Independent Tests of Entropy. <i>Physical Review Letters</i> , 2015, 115, 110501.	7.8	39
66	Postquantum Steering. <i>Physical Review Letters</i> , 2015, 115, 190403.	7.8	48
67	Inequivalence of entanglement, steering, and Bell nonlocality for general measurements. <i>Physical Review A</i> , 2015, 92, .	2.5	165
68	Exploring the Limits of Quantum Nonlocality with Entangled Photons. <i>Physical Review X</i> , 2015, 5, .	8.9	40
69	Autonomous quantum thermal machine for generating steady-state entanglement. <i>New Journal of Physics</i> , 2015, 17, 113029.	2.9	88
70	Nonlocality of W and Dicke states subject to losses. <i>Physical Review A</i> , 2015, 91, .	2.5	21
71	Passivity, complete passivity, and virtual temperatures. <i>Physical Review E</i> , 2015, 91, 052133.	2.1	44
72	Extractable Work from Correlations. <i>Physical Review X</i> , 2015, 5, .	8.9	143

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73	Self-Testing Quantum Random Number Generator. <i>Physical Review Letters</i> , 2015, 114, 150501.	7.8	140
74	Local Hidden Variable Models for Entangled Quantum States Using Finite Shared Randomness. <i>Physical Review Letters</i> , 2015, 114, 120401.	7.8	25
75	Thermodynamic cost of creating correlations. <i>New Journal of Physics</i> , 2015, 17, 065008.	2.9	68
76	Experimental Tests of Nonlocality with Entangled Photons. , 2015, , .		0
77	Dimension of physical systems, information processing, and thermodynamics. <i>New Journal of Physics</i> , 2014, 16, 123050.	2.9	20
78	Device-dependent and device-independent quantum key distribution without a shared reference frame. <i>New Journal of Physics</i> , 2014, 16, 043002.	2.9	10
79	One-way Einstein-Podolsky-Rosen Steering. <i>Physical Review Letters</i> , 2014, 112, .	7.8	227
80	Entanglement enhances cooling in microscopic quantum refrigerators. <i>Physical Review E</i> , 2014, 89, 032115.	2.1	160
81	Experimental Semi-Device-Independent Certification of Entangled Measurements. <i>Physical Review Letters</i> , 2014, 113, 080405.	7.8	11
82	Fifty years of Bell's theorem. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2014, 47, 420301.	2.1	14
83	Measurement of sub-pulse-width temporal delays via spectral interference induced by weak value amplification. <i>Physical Review A</i> , 2014, 89, .	2.5	49
84	Bell nonlocality. <i>Reviews of Modern Physics</i> , 2014, 86, 419-478.	45.6	1,792
85	Certifying the Dimension of Classical and Quantum Systems in a Prepare-and-Measure Scenario with Independent Devices. <i>Physical Review Letters</i> , 2014, 112, 140407.	7.8	84
86	Disproving the Peres conjecture by showing Bell nonlocality from bound entanglement. <i>Nature Communications</i> , 2014, 5, 5297.	12.8	75
87	Joint Measurability, Einstein-Podolsky-Rosen Steering, and Bell Nonlocality. <i>Physical Review Letters</i> , 2014, 113, 160402.	7.8	209
88	Publisher's Note: Bell nonlocality [<i>Rev. Mod. Phys.</i> , 86, 419 (2014)]. <i>Reviews of Modern Physics</i> , 2014, 86, 839-840.	45.6	53
89	Pre- and postselected quantum states: Density matrices, tomography, and Kraus operators. <i>Physical Review A</i> , 2014, 89, .	2.5	33
90	Device-Independent Quantum Information Processing. , 2014, , .		2

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91	Measurement of sub-pulse-width temporal delays via spectral interference induced by weak value amplification. , 2014, , .		0
92	Testing nonlocality of a single photon without a shared reference frame. Physical Review A, 2013, 88, .	2.5	26
93	Connection between Bell nonlocality and Bayesian game theory. Nature Communications, 2013, 4, 2057.	12.8	88
94	Genuine Hidden Quantum Nonlocality. Physical Review Letters, 2013, 111, 160402.	7.8	89
95	Dimension Witnesses and Quantum State Discrimination. Physical Review Letters, 2013, 110, 150501.	7.8	80
96	All quantum states useful for teleportation are nonlocal resources. Physical Review A, 2013, 87, .	2.5	57
97	Proposal for a loophole-free Bell test based on spin- $\frac{1}{2}$ photon interactions in cavities. New Journal of Physics, 2013, 15, 105006.	2.9	9
98	Loophole-free Einstein-Podolsky-Rosen experiment via quantum steering. New Journal of Physics, 2012, 14, 053030.	2.9	206
99	Closing the detection loophole in multipartite Bell tests using Greenberger-Horne-Zeilinger states. Physical Review A, 2012, 86, .	2.5	12
100	Bell inequalities for three systems and arbitrarily many measurement outcomes. Physical Review A, 2012, 85, .	2.5	18
101	Testing the Structure of Multipartite Entanglement with Bell Inequalities. Physical Review Letters, 2012, 108, 110501.	7.8	72
102	A framework for the study of symmetric full-correlation Bell-like inequalities. Journal of Physics A: Mathematical and Theoretical, 2012, 45, 125301.	2.1	34
103	Guaranteed violation of a Bell inequality without aligned reference frames or calibrated devices. Scientific Reports, 2012, 2, 470.	3.3	54
104	Quantum Nonlocality Does Not Imply Entanglement Distillability. Physical Review Letters, 2012, 108, 030403.	7.8	47
105	A Quantum Delayed-Choice Experiment. Science, 2012, 338, 634-637.	12.6	199
106	Classical Simulation of Entanglement Swapping with Bounded Communication. Physical Review Letters, 2012, 109, 100401.	7.8	23
107	Persistency of entanglement and nonlocality in multipartite quantum systems. Physical Review A, 2012, 86, .	2.5	20
108	Bell tests for continuous-variable systems using hybrid measurements and heralded amplifiers. Physical Review A, 2012, 85, .	2.5	25

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109	Virtual qubits, virtual temperatures, and the foundations of thermodynamics. <i>Physical Review E</i> , 2012, 85, 051117.	2.1	159
110	Experimental estimation of the dimension of classical and quantum systems. <i>Nature Physics</i> , 2012, 8, 588-591.	16.7	97
111	Device-Independent Certification of Entangled Measurements. <i>Physical Review Letters</i> , 2011, 107, 050502.	7.8	61
112	Physics within a quantum reference frame. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2011, 44, 145304.	2.1	58
113	Detecting Genuine Multipartite Quantum Nonlocality: A Simple Approach and Generalization to Arbitrary Dimensions. <i>Physical Review Letters</i> , 2011, 106, 020405.	7.8	99
114	Bound Nonlocality and Activation. <i>Physical Review Letters</i> , 2011, 106, 020402.	7.8	40
115	Limits on nonlocal correlations from the structure of the local state space. <i>New Journal of Physics</i> , 2011, 13, 063024.	2.9	58
116	Heralded amplification for precision measurements with spin ensembles. <i>Physical Review A</i> , 2011, 84, .	2.5	5
117	Large violation of Bell inequalities using both particle and wave measurements. <i>Physical Review A</i> , 2011, 84, .	2.5	29
118	Semi-device-independent security of one-way quantum key distribution. <i>Physical Review A</i> , 2011, 84, .	2.5	194
119	Semi-device-independent bounds on entanglement. <i>Physical Review A</i> , 2011, 83, .	2.5	58
120	The smallest refrigerators can reach maximal efficiency. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2011, 44, 492002.	2.1	92
121	New perspectives on quantum correlations. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2010, 42, 354-358.	2.7	3
122	Steered towards non-locality. <i>Nature Physics</i> , 2010, 6, 842-843.	16.7	2
123	Guess Your Neighbors' Input: A Multipartite Nonlocal Game with No Quantum Advantage. <i>Physical Review Letters</i> , 2010, 104, 230404.	7.8	137
124	Measuring Small Longitudinal Phase Shifts: Weak Measurements or Standard Interferometry?. <i>Physical Review Letters</i> , 2010, 105, 010405.	7.8	309
125	Device-Independent Tests of Classical and Quantum Dimensions. <i>Physical Review Letters</i> , 2010, 105, 230501.	7.8	207
126	Closing the Detection Loophole in Bell Experiments Using Qudits. <i>Physical Review Letters</i> , 2010, 104, 060401.	7.8	188

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127	Emergence of Quantum Correlations from Nonlocality Swapping. Physical Review Letters, 2009, 102, 110402.	7.8	33
128	Nonlocality Distillation and Postquantum Theories with Trivial Communication Complexity. Physical Review Letters, 2009, 102, 160403.	7.8	94
129	Couplers for non-locality swapping. New Journal of Physics, 2009, 11, 073014.	2.9	13
130	Closed sets of nonlocal correlations. Physical Review A, 2009, 80, .	2.5	58
131	Device-independent quantum key distribution secure against collective attacks. New Journal of Physics, 2009, 11, 045021.	2.9	379
132	Recovering part of the boundary between quantum and nonquantum correlations from information causality. Physical Review A, 2009, 80, .	2.5	63
133	Towards Quantum Experiments with Human Eyes as Detectors Based on Cloning via Stimulated Emission. Physical Review Letters, 2009, 103, 113601.	7.8	62
134	Partial list of bipartite Bell inequalities with four binary settings. Physics Letters, Section A: General, Atomic and Solid State Physics, 2008, 372, 3162-3167.	2.1	62
135	Testing quantum correlations versus single-particle properties within Leggett's model and beyond. Nature Physics, 2008, 4, 681-685.	16.7	80
136	Testing the Dimension of Hilbert Spaces. Physical Review Letters, 2008, 100, 210503.	7.8	208
137	Simulation of partial entanglement with nonsignaling resources. Physical Review A, 2008, 78, .	2.5	24
138	Testing a Bell inequality in multipair scenarios. Physical Review A, 2008, 78, .	2.5	15
139	Possible entanglement detection with the naked eye. Physical Review A, 2008, 78, .	2.5	23
140	Detection Loophole in Asymmetric Bell Experiments. Physical Review Letters, 2007, 98, 220403.	7.8	95
141	Device-Independent Security of Quantum Cryptography against Collective Attacks. Physical Review Letters, 2007, 98, 230501.	7.8	1,221
142	Bell-type inequalities for nonlocal resources. Journal of Mathematical Physics, 2006, 47, 112101.	1.1	8
143	Secrecy extraction from no-signaling correlations. Physical Review A, 2006, 74, .	2.5	76
144	Entanglement and non-locality are different resources. New Journal of Physics, 2005, 7, 88-88.	2.9	97

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145	Fast and simple one-way quantum key distribution. Applied Physics Letters, 2005, 87, 194108.	3.3	229
146	Direct Measurement of Superluminal Group Velocity and Signal Velocity in an Optical Fiber. Physical Review Letters, 2004, 93, 203902.	7.8	179
147	Optical Telecom Networks as Weak Quantum Measurements with Postselection. Physical Review Letters, 2003, 91, 180402.	7.8	73
148	Better local hidden variable models for two-qubit Werner states and an upper bound on the Grothendieck constant $\langle \text{tr}(K G) \rangle \leq \frac{1}{\sqrt{2}}$ Quantum - the Open Journal for Quantum Science, 0, 1, 3.	0.0	57
149	Heralded generation of maximal entanglement in any dimension via incoherent coupling to thermal baths. Quantum - the Open Journal for Quantum Science, 0, 2, 73.	0.0	27
150	Fundamental limits on low-temperature quantum thermometry with finite resolution. Quantum - the Open Journal for Quantum Science, 0, 3, 161.	0.0	44
151	Anomalous Weak Values Without Post-Selection. Quantum - the Open Journal for Quantum Science, 0, 3, 194.	0.0	6
152	Exploring the limits of no backwards in time signalling. Quantum - the Open Journal for Quantum Science, 0, 3, 211.	0.0	4
153	Informationally restricted quantum correlations. Quantum - the Open Journal for Quantum Science, 0, 4, 332.	0.0	16
154	Receiver-Device-Independent Quantum Key Distribution. Quantum - the Open Journal for Quantum Science, 0, 6, 718.	0.0	2