

Michał, Horodecki

List of Publications by Year in descending order

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121
papers

19,684
citations

53794

45
h-index

26613

107
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121
all docs

121
docs citations

121
times ranked

6438
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum entanglement. <i>Reviews of Modern Physics</i> , 2009, 81, 865-942.	45.6	6,975
2	Separability of mixed states: necessary and sufficient conditions. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1996, 223, 1-8.	2.1	3,050
3	Mixed-State Entanglement and Distillation: Is there a "Bound" Entanglement in Nature?. <i>Physical Review Letters</i> , 1998, 80, 5239-5242.	7.8	942
4	General teleportation channel, singlet fraction, and quasidistillation. <i>Physical Review A</i> , 1999, 60, 1888-1898.	2.5	713
5	Fundamental limitations for quantum and nanoscale thermodynamics. <i>Nature Communications</i> , 2013, 4, 2059.	12.8	550
6	The second laws of quantum thermodynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 3275-3279.	7.1	471
7	Thermodynamical Approach to Quantifying Quantum Correlations. <i>Physical Review Letters</i> , 2002, 89, 180402.	7.8	442
8	Resource Theory of Quantum States Out of Thermal Equilibrium. <i>Physical Review Letters</i> , 2013, 111, 250404.	7.8	437
9	Local versus nonlocal information in quantum-information theory: Formalism and phenomena. <i>Physical Review A</i> , 2005, 71, .	2.5	389
10	Partial quantum information. <i>Nature</i> , 2005, 436, 673-676.	27.8	345
11	Limits for Entanglement Measures. <i>Physical Review Letters</i> , 2000, 84, 2014-2017.	7.8	283
12	Secure Key from Bound Entanglement. <i>Physical Review Letters</i> , 2005, 94, 160502.	7.8	256
13	Limitations on the Evolution of Quantum Coherences: Towards Fully Quantum Second Laws of Thermodynamics. <i>Physical Review Letters</i> , 2015, 115, 210403.	7.8	225
14	The asymptotic entanglement cost of preparing a quantum state. <i>Journal of Physics A</i> , 2001, 34, 6891-6898.	1.6	220
15	(QUANTUMNESS IN THE CONTEXT OF) RESOURCE THEORIES. <i>International Journal of Modern Physics B</i> , 2013, 27, 1345019.	2.0	211
16	Quantum State Merging and Negative Information. <i>Communications in Mathematical Physics</i> , 2006, 269, 107-136.	2.2	199
17	Locking Classical Correlations in Quantum States. <i>Physical Review Letters</i> , 2004, 92, 067902.	7.8	189
18	Local Indistinguishability: More Nonlocality with Less Entanglement. <i>Physical Review Letters</i> , 2003, 90, 047902.	7.8	181

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19	Local Random Quantum Circuits are Approximate Polynomial-Designs. Communications in Mathematical Physics, 2016, 346, 397-434.	2.2	174
20	Reversible transformations from pure to mixed states and the unique measure of information. Physical Review A, 2003, 67, .	2.5	172
21	The uniqueness theorem for entanglement measures. Journal of Mathematical Physics, 2002, 43, 4252-4272.	1.1	154
22	Local environment can enhance fidelity of quantum teleportation. Physical Review A, 2000, 62, .	2.5	140
23	Local Information as a Resource in Distributed Quantum Systems. Physical Review Letters, 2003, 90, 100402.	7.8	135
24	The Universal Composable Security of Quantum Key Distribution. Lecture Notes in Computer Science, 2005, , 386-406.	1.3	109
25	A Decoupling Approach to the Quantum Capacity. Open Systems and Information Dynamics, 2008, 15, 7-19.	1.2	107
26	General Paradigm for Distilling Classical Key From Quantum States. IEEE Transactions on Information Theory, 2009, 55, 1898-1929.	2.4	99
27	Thermodynamics of Quantum Information Systems – Hamiltonian Description. Open Systems and Information Dynamics, 2004, 11, 205-217.	1.2	96
28	An area law for entanglement from exponential decay of correlations. Nature Physics, 2013, 9, 721-726.	16.7	90
29	Are the Laws of Entanglement Theory Thermodynamical?. Physical Review Letters, 2002, 89, 240403.	7.8	83
30	Entanglement measures. Quantum Information and Computation, 2001, 1, 3-26.	0.3	83
31	Dynamical description of quantum computing: Generic nonlocality of quantum noise. Physical Review A, 2002, 65, .	2.5	82
32	Separability of Mixed Quantum States: Linear Contractions and Permutation Criteria. Open Systems and Information Dynamics, 2006, 13, 103-111.	1.2	78
33	Global Information Balance in Quantum Measurements. Physical Review Letters, 2008, 100, 210504.	7.8	76
34	Exponential Decay of Correlations Implies Area Law. Communications in Mathematical Physics, 2015, 333, 761-798.	2.2	71
35	Squashed Entanglement for Multipartite States and Entanglement Measures Based on the Mixed Convex Roof. IEEE Transactions on Information Theory, 2009, 55, 3375-3387.	2.4	69
36	Postulates for measures of genuine multipartite correlations. Physical Review A, 2011, 83, .	2.5	67

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37	Irreversibility for All Bound Entangled States. <i>Physical Review Letters</i> , 2005, 95, 190501.	7.8	66
38	Binding entanglement channels. <i>Journal of Modern Optics</i> , 2000, 47, 347-354.	1.3	58
39	An Additive and Operational Entanglement Measure: Conditional Entanglement of Mutual Information. <i>Physical Review Letters</i> , 2008, 101, 140501.	7.8	58
40	Low-Dimensional Bound Entanglement With One-Way Distillable Cryptographic Key. <i>IEEE Transactions on Information Theory</i> , 2008, 54, 2621-2625.	2.4	56
41	Quantum Key Distribution Based on Private States: Unconditional Security Over Untrusted Channels With Zero Quantum Capacity. <i>IEEE Transactions on Information Theory</i> , 2008, 54, 2604-2620.	2.4	53
42	Convergence to equilibrium under a random Hamiltonian. <i>Physical Review E</i> , 2012, 86, 031101.	2.1	53
43	Unified Approach to Quantum Capacities: Towards Quantum Noisy Coding Theorem. <i>Physical Review Letters</i> , 2000, 85, 433-436.	7.8	52
44	Optimal strategy for a single-qubit gate and the trade-off between opposite types of decoherence. <i>Physical Review A</i> , 2004, 70, .	2.5	51
45	Limits for compression of quantum information carried by ensembles of mixed states. <i>Physical Review A</i> , 1998, 57, 3364-3369.	2.5	47
46	Concurrence in arbitrary dimensions. <i>Journal of Modern Optics</i> , 2002, 49, 1289-1297.	1.3	46
47	On asymptotic continuity of functions of quantum states. <i>Journal of Physics A</i> , 2006, 39, L423-L437.	1.6	46
48	Locking Entanglement with a Single Qubit. <i>Physical Review Letters</i> , 2005, 94, 200501.	7.8	45
49	Realistic noise-tolerant randomness amplification using finite number of devices. <i>Nature Communications</i> , 2016, 7, 11345.	12.8	45
50	On Hastings' Counterexamples to the Minimum Output Entropy Additivity Conjecture. <i>Open Systems and Information Dynamics</i> , 2010, 17, 31-52.	1.2	43
51	Creating a Superposition of Unknown Quantum States. <i>Physical Review Letters</i> , 2016, 116, 110403.	7.8	43
52	Mutually exclusive aspects of information carried by physical systems: Complementarity between local and nonlocal information. <i>Physical Review A</i> , 2003, 68, .	2.5	38
53	Characterization of Combinatorially Independent Permutation Separability Criteria. <i>Open Systems and Information Dynamics</i> , 2005, 12, 331-345.	1.2	37
54	Simplifying Monotonicity Conditions for Entanglement Measures. <i>Open Systems and Information Dynamics</i> , 2005, 12, 231-237.	1.2	35

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55	Efficient Quantum Pseudorandomness. <i>Physical Review Letters</i> , 2016, 116, 170502.	7.8	35
56	Quantum communication complexity advantage implies violation of a Bell inequality. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 3191-3196.	7.1	34
57	Unifying Classical and Quantum Key Distillation. , 2007, , 456-478.		34
58	Asymptotic Manipulations of Entanglement Can Exhibit Genuine Irreversibility. <i>Physical Review Letters</i> , 2000, 84, 4260-4263.	7.8	33
59	A Few Steps More Towards NPT Bound Entanglement. <i>IEEE Transactions on Information Theory</i> , 2010, 56, 4085-4100.	2.4	33
60	Port-based teleportation in arbitrary dimension. <i>Scientific Reports</i> , 2017, 7, 10871.	3.3	27
61	Distillation Protocols: Output Entanglement and Local Mutual Information. <i>Physical Review Letters</i> , 2004, 93, 170503.	7.8	26
62	Randomness Amplification under Minimal Fundamental Assumptions on the Devices. <i>Physical Review Letters</i> , 2016, 117, 230501.	7.8	26
63	How to reuse a one-time pad and other notes on authentication, encryption, and protection of quantum information. <i>Physical Review A</i> , 2005, 72, .	2.5	24
64	Optimal port-based teleportation. <i>New Journal of Physics</i> , 2018, 20, 053006.	2.9	24
65	Towards a Unified Approach to Information-Disturbance Tradeoffs in Quantum Measurements. <i>Open Systems and Information Dynamics</i> , 2009, 16, 29-48.	1.2	23
66	A Sufficient Set of Experimentally Implementable Thermal Operations for Small Systems. <i>Physical Review X</i> , 2018, 8, .	8.9	23
67	Free randomness amplification using bipartite chain correlations. <i>Physical Review A</i> , 2014, 90, .	2.5	20
68	Common Origin of No-Cloning and No-Deleting Principles Conservation of Information. <i>Foundations of Physics</i> , 2005, 35, 2041-2049.	1.3	19
69	Balance of information in bipartite quantum-communication systems: Entanglement-energy analogy. <i>Physical Review A</i> , 2001, 63, .	2.5	18
70	Constructive counterexamples to the additivity of the minimum output Rényi entropy of quantum channels for all $p > 1$. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2010, 43, 425304.	2.1	18
71	Simple scheme for encoding and decoding a qubit in unknown state for various topological codes. <i>Scientific Reports</i> , 2015, 5, 8975.	3.3	17
72	Exponential quantum speed-ups are generic. <i>Quantum Information and Computation</i> , 2013, 13, 901-924.	0.3	17

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73	QUANTUMNESS OF ENSEMBLE FROM NO-BROADCASTING PRINCIPLE. International Journal of Quantum Information, 2006, 04, 105-118.	1.1	16
74	Reversible path to thermodynamics. Nature Physics, 2008, 4, 833-834.	16.7	16
75	Long-distance quantum communication over noisy networks without long-time quantum memory. Physical Review A, 2014, 90, .	2.5	16
76	Conjectured strong complementary-correlations tradeoff. Physical Review A, 2013, 88, .	2.5	15
77	Decomposability and convex structure of thermal processes. New Journal of Physics, 2018, 20, 053040.	2.9	15
78	Generalized Teleportation and Entanglement Recycling. Physical Review Letters, 2013, 110, 010505.	7.8	14
79	When Are Popescu-Rohrlich Boxes and Random Access Codes Equivalent?. Physical Review Letters, 2014, 113, 100401.	7.8	14
80	Einstein-Podolsky-Rosen paradox without entanglement. Physical Review A, 1999, 60, 4144-4145.	2.5	13
81	Information Theories with Adversaries, Intrinsic Information, and Entanglement. Foundations of Physics, 2005, 35, 2027-2040.	1.3	13
82	Region of fidelities for a universal qubit quantum cloner. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 2178-2187.	2.1	13
83	Local random quantum circuits are approximate polynomial-designs: numerical results. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 305301.	2.1	13
84	A simplified formalism of the algebra of partially transposed permutation operators with applications. Journal of Physics A: Mathematical and Theoretical, 2018, 51, 125202.	2.1	13
85	Extremal distributions under approximate majorization. Journal of Physics A: Mathematical and Theoretical, 2018, 51, 305301.	2.1	13
86	Information-thermodynamics link revisited. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 204001.	2.1	13
87	Structure and properties of the algebra of partially transposed permutation operators. Journal of Mathematical Physics, 2014, 55, 032202.	1.1	12
88	Group-representation approach to quantum cloning machines. Physical Review A, 2014, 89, .	2.5	12
89	Conditional uncertainty principle. Physical Review A, 2018, 97, .	2.5	12
90	Quantum Coding Theorem from Privacy and Distinguishability. Open Systems and Information Dynamics, 2008, 15, 47-69.	1.2	11

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91	No Quantum Realization of Extremal No-Signaling Boxes. <i>Physical Review Letters</i> , 2016, 117, 050401.	7.8	11
92	Quantum error-correction codes and absolutely maximally entangled states. <i>Physical Review A</i> , 2020, 101, .	2.5	11
93	Thermodynamics of Minimal Coupling Quantum Heat Engines. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 4, 375.	0.0	11
94	Commutant structure of $U^{\otimes n}(\hat{U}^{\otimes n})^*$ transformations. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2013, 46, 395303.	2.1	10
95	Epsilon-Nets, Unitary Designs, and Random Quantum Circuits. <i>IEEE Transactions on Information Theory</i> , 2022, 68, 989-1015.	2.4	10
96	Efficient Multi Port-Based Teleportation Schemes. <i>IEEE Transactions on Information Theory</i> , 2022, 68, 7892-7912.	2.4	10
97	Nonsignaling quantum random access-code boxes. <i>Physical Review A</i> , 2015, 92, .	2.5	8
98	Operational foundations for complementarity and uncertainty relations. <i>Physical Review A</i> , 2020, 101, .	2.5	8
99	Gadget structures in proofs of the Kochen-Specker theorem. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 4, 308.	0.0	8
100	Multiport based teleportation " transmission of a large amount of quantum information. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 5, 576.	0.0	8
101	Operator space approach to steering inequality. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2015, 48, 135303.	2.1	7
102	Amplifying the Randomness of Weak Sources Correlated With Devices. <i>IEEE Transactions on Information Theory</i> , 2017, 63, 7592-7611.	2.4	7
103	Bounds on localizable information via semidefinite programming. <i>Journal of Mathematical Physics</i> , 2005, 46, 082107.	1.1	6
104	Explicit constructions of unitary transformations between equivalent irreducible representations. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2014, 47, 505203.	2.1	5
105	Measurement uncertainty from no-signaling and nonlocality. <i>Physical Review A</i> , 2017, 96, .	2.5	5
106	Do black holes create polyamory?. <i>Journal of High Energy Physics</i> , 2018, 2018, 1.	4.7	5
107	Second law of thermodynamics for batteries with vacuum state. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 5, 408.	0.0	5
108	Distillation of entanglement by projection on permutationally invariant subspaces. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2012, 45, 125303.	2.1	4

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109	Entanglement-swapping boxes and their communication properties. Physical Review A, 2008, 77, .	2.5	3
110	Low-dimensional quite noisy bound entanglement with a cryptographic key. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 035301.	2.1	3
111	Bound entangled states with extremal properties. Physical Review A, 2014, 90, .	2.5	3
112	Compression of Quantum Information. Fortschritte Der Physik, 2001, 49, 667-722.	4.4	2
113	Zero-knowledge convincing protocol on quantum bit is impossible. Quantum - the Open Journal for Quantum Science, 0, 1, 41.	0.0	2
114	DIRECT DETECTION OF QUANTUM ENTANGLEMENT. , 2003, , .		1
115	Fluctuation-dissipation relations for thermodynamic distillation processes. Physical Review E, 2022, 105, .	2.1	1
116	A UNIVERSAL QUANTUM ESTIMATOR. International Journal of Quantum Information, 2005, 03, 123-132.	1.1	0
117	Entanglement-redistribution boxes. Physical Review A, 2008, 78, .	2.5	0
118	Construction and properties of a class of private states in arbitrary dimensions. Physical Review A, 2015, 91, .	2.5	0
119	Sharp transitions in low-number quantum dots Bayesian magnetometry. Scientific Reports, 2016, 6, 34327.	3.3	0
120	Generalized XOR non-locality games with graph description on a square lattice. Journal of Physics A: Mathematical and Theoretical, 2020, 53, 265302.	2.1	0
121	A UNIVERSAL QUANTUM ESTIMATOR. , 2005, , .		0