Andrew M Childs

List of Publications by Year
in descending order

73	7,029	156536	162838
papers	citations	32 h-index	57 g-index

73	73	73	3537
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Nearly optimal time-independent reversal of a spin chain. Physical Review Research, 2022, 4, .	1.3	4
2	Efficient product formulas for commutators and applications to quantum simulation. Physical Review Research, 2022, 4, .	1.3	7
3	Theory of Trotter Error with Commutator Scaling. Physical Review X, 2021, 11, .	2.8	185
4	Efficient quantum algorithm for dissipative nonlinear differential equations. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	74
5	Signaling and scrambling with strongly long-range interactions. Physical Review A, 2020, 102, .	1.0	27
6	Destructive Error Interference in Product-Formula Lattice Simulation. Physical Review Letters, 2020, 124, 220502.	2.9	20
7	Quantum Spectral Methods for Differential Equations. Communications in Mathematical Physics, 2020, 375, 1427-1457.	1.0	57
8	Symmetries, Graph Properties, and Quantum Speedups. , 2020, , .		7
9	Nearly Optimal Lattice Simulation by Product Formulas. Physical Review Letters, 2019, 123, 050503.	2.9	71
10	Locality and Digital Quantum Simulation of Power-Law Interactions. Physical Review X, 2019, 9, .	2.8	62
11	Toward the first quantum simulation with quantum speedup. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 9456-9461.	3.3	271
12	Quantum algorithm for multivariate polynomial interpolation. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20170480.	1.0	7
13	Automated optimization of large quantum circuits with continuous parameters. Npj Quantum Information, 2018, 4, .	2.8	120
14	EXPONENTIAL IMPROVEMENT IN PRECISION FOR SIMULATING SPARSE HAMILTONIANS. Forum of Mathematics, Sigma, 2017, 5, .	0.3	14
15	Quantum advantage deferred. Nature Physics, 2017, 13, 1148-1148.	6.5	0
16	Quantum Algorithm for Linear Differential Equations with Exponentially Improved Dependence on Precision. Communications in Mathematical Physics, 2017, 356, 1057-1081.	1.0	101
17	Quantum Algorithm for Systems of Linear Equations with Exponentially Improved Dependence on Precision. SIAM Journal on Computing, 2017, 46, 1920-1950.	0.8	277
18	Optimal state discrimination and unstructured search in nonlinear quantum mechanics. Physical Review A, 2016, 93, .	1.0	16

#	Article	IF	Citations
19	Simulating Hamiltonian Dynamics with a Truncated Taylor Series. Physical Review Letters, 2015, 114, 090502.	2.9	375
20	Hamiltonian Simulation with Nearly Optimal Dependence on all Parameters. , 2015, , .		155
21	Exponential improvement in precision for simulating sparse Hamiltonians. , 2014, , .		121
22	The Bose-Hubbard Model is QMA-complete. Lecture Notes in Computer Science, 2014, , 308-319.	1.0	16
23	Spatial search by continuous-time quantum walks on crystal lattices. Physical Review A, 2014, 89, .	1.0	34
24	Quantum computation of discrete logarithms in semigroups. Journal of Mathematical Cryptology, 2014, 8, 405-416.	0.4	18
25	Constructing elliptic curve isogenies in quantum subexponential time. Journal of Mathematical Cryptology, 2014, 8, 1-29.	0.4	150
26	A Framework for Bounding Nonlocality of State Discrimination. Communications in Mathematical Physics, 2013, 323, 1121-1153.	1.0	70
27	Universal Computation by Multiparticle Quantum Walk. Science, 2013, 339, 791-794.	6.0	326
28	Product formulas for exponentials of commutators. Journal of Mathematical Physics, 2013, 54, .	0.5	7
29	Interpolatability distinguishes LOCC from separable von Neumann measurements. Journal of Mathematical Physics, 2013, 54, .	0.5	2
30	Time-Efficient Quantum Walks for 3-Distinctness. Lecture Notes in Computer Science, 2013, , 105-122.	1.0	21
31	Levinson's theorem for graphs II. Journal of Mathematical Physics, 2012, 53, .	0.5	12
32	Quantum Query Complexity of Minor-Closed Graph Properties. SIAM Journal on Computing, 2012, 41, 1426-1450.	0.8	12
33	The Quantum Query Complexity of Read-Many Formulas. Lecture Notes in Computer Science, 2012, , 337-348.	1.0	10
34	Black-box Hamiltonian simulation and unitary implementation. Quantum Information and Computation, 2012, 12, 29-62.	0.1	71
35	Hamiltonian simulation using linear combinations of unitary operations. Quantum Information and Computation, 2012, 12, 901-924.	0.1	159
36	Levinson's theorem for graphs. Journal of Mathematical Physics, 2011, 52, .	0.5	6

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37	Simulating Sparse Hamiltonians with Star Decompositions. Lecture Notes in Computer Science, 2011, , 94-103.	1.0	34
38	On the Relationship Between Continuous- and Discrete-Time Quantum Walk. Communications in Mathematical Physics, 2010, 294, 581-603.	1.0	245
39	Any AND-OR Formula of Size N Can Be Evaluated in Time $N^{1/2+o(1)}$ on a Quantum Computer. SIAM Journal on Computing, 2010, 39, 2513-2530.	0.8	96
40	Quantum algorithms for algebraic problems. Reviews of Modern Physics, 2010, 82, 1-52.	16.4	188
41	Equation solving by simulation. Nature Physics, 2009, 5, 861-861.	6.5	25
42	Universal Computation by Quantum Walk. Physical Review Letters, 2009, 102, 180501.	2.9	721
43	Title is missing!. Theory of Computing, 2009, 5, 119-123.	0.3	35
44	Optimal Quantum Adversary Lower Bounds for Ordered Search. Lecture Notes in Computer Science, 2008, , 869-880.	1.0	6
45	Quantum algorithms for the ordered search problem via semidefinite programming. Physical Review A, 2007, 75, .	1.0	24
46	Quantum Algorithms for Hidden Nonlinear Structures. , 2007, , .		23
47	Any AND-OR Formula of Size N can be Evaluated in time N^{1/2 + o(1)} on a Quantum Computer. , 2007, , .		60
48	The limitations of nice mutually unbiased bases. Journal of Algebraic Combinatorics, 2007, 25, 111-123.	0.4	31
49	Weak Fourier-Schur Sampling, the Hidden Subgroup Problem, and the Quantum Collision Problem. , 2007, , 598-609.		10
50	Any AND-OR Formula of Size N can be Evaluated in time N^{1/2 + o(1)} on a Quantum Computer. , 2007, , .		2
51	Quantum Algorithms for Hidden Nonlinear Structures. , 2007, , .		1
52	TWO-WAY QUANTUM COMMUNICATION CHANNELS. International Journal of Quantum Information, 2006, 04, 63-83.	0.6	15
53	Unified derivations of measurement-based schemes for quantum computation. Physical Review A, 2005, 71, .	1.0	93
54	Spatial search by quantum walk. Physical Review A, 2004, 70, .	1.0	510

#	Article	IF	Citations
55	Spatial search and the Dirac equation. Physical Review A, 2004, 70, .	1.0	115
56	Reversible Simulation of Bipartite Product Hamiltonians. IEEE Transactions on Information Theory, 2004, 50, 1189-1197.	1.5	15
57	Exponential algorithmic speedup by a quantum walk. , 2003, , .		374
58	Lower bounds on the complexity of simulating quantum gates. Physical Review A, 2003, 68, .	1.0	32
59	Quantum search by measurement. Physical Review A, 2002, 66, .	1.0	55
60	Universal simulation of Hamiltonian dynamics for quantum systems with finite-dimensional state spaces. Physical Review A, 2002, 66, .	1.0	74
61	An Example of the Difference Between Quantum and Classical Random Walks. Quantum Information Processing, 2002, 1, 35-43.	1.0	334
62	Realization of quantum process tomography in NMR. Physical Review A, 2001, 64, .	1.0	162
63	Exact sampling from nonattractive distributions using summary states. Physical Review E, 2001, 63, 036113.	0.8	11
64	Robustness of adiabatic quantum computation. Physical Review A, 2001, 65, .	1.0	359
65	Universal simulation of Markovian quantum dynamics. Physical Review A, 2001, 64, .	1.0	83
66	Quantum information and precision measurement. Journal of Modern Optics, 2000, 47, 155-176.	0.6	130
67	Universal quantum computation with two-level trapped ions. Physical Review A, 2000, 63, .	1.0	65
68	Quantum routing with fast reversals. Quantum - the Open Journal for Quantum Science, 0, 5, 533.	0.0	6
69	Quantum information and precision measurement. , 0, .		8
70	Faster quantum simulation by randomization. Quantum - the Open Journal for Quantum Science, 0, 3, 182.	0.0	79
71	Quantum algorithms and lower bounds for convex optimization. Quantum - the Open Journal for Quantum Science, 0, 4, 221.	0.0	19
72	Time-dependent Hamiltonian simulation with<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msup><mml:mi>L</mml:mi><mml:mn>1</mml:mn><mml:msup><mml:m scaling. Quantum - the Open Journal for Quantum Science, 0, 4, 254.	0.0	50

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73	High-precision quantum algorithms for partial differential equations. Quantum - the Open Journal for Quantum Science, 0, 5, 574.	0.0	54