Christopher Monroe

List of Publications by Year
in descending order

76 papers	15,206 citations	44069 48 h-index	88630 70 g-index
77 all docs	77 docs citations	77 times ranked	8215 citing authors

#	Article	IF	Citations
1	Quantum dynamics of single trapped ions. Reviews of Modern Physics, 2003, 75, 281-324.	45.6	2,029
2	Experimental issues in coherent quantum-state manipulation of trapped atomic ions. Journal of Research of the National Institute of Standards and Technology, 1998, 103, 259.	1.2	1,142
3	Observation of a discrete time crystal. Nature, 2017, 543, 217-220.	27.8	764
4	Many-body localization in a quantum simulator with programmable random disorder. Nature Physics, 2016, 12, 907-911.	16.7	657
5	Entanglement of single-atom quantum bits at a distance. Nature, 2007, 449, 68-71.	27.8	635
6	Resolved-Sideband Raman Cooling of a Bound Atom to the 3D Zero-Point Energy. Physical Review Letters, 1995, 75, 4011-4014.	7.8	597
7	Observation of entanglement between a single trapped atom and a single photon. Nature, 2004, 428, 153-157.	27.8	563
8	Demonstration of a small programmable quantum computer with atomic qubits. Nature, 2016, 536, 63-66.	27.8	549
9	Scaling the Ion Trap Quantum Processor. Science, 2013, 339, 1164-1169.	12.6	529
10	Quantum information processing with atoms and photons. Nature, 2002, 416, 238-246.	27.8	495
11	Heating of trapped ions from the quantum ground state. Physical Review A, 2000, 61, .	2.5	432
12	Colloquium: Quantum networks with trapped ions. Reviews of Modern Physics, 2010, 82, 1209-1224.	45.6	421
13	Large-scale modular quantum-computer architecture with atomic memory and photonic interconnects. Physical Review A, 2014, 89, .	2.5	400
14	Manipulation and detection of a trapped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msup><mml:mi>Yb</mml:mi><mml:mo>+</mml:mo></mml:msup></mml:mrow></mml:math>hyperfine qubit. Physical Review A, 2007, 76, .	2.5	351
15	Experimental comparison of two quantum computing architectures. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 3305-3310.	7.1	326
16	Programmable quantum simulations of spin systems with trapped ions. Reviews of Modern Physics, 2021, 93, .	45.6	316
17	Benchmarking an 11-qubit quantum computer. Nature Communications, 2019, 10, 5464.	12.8	307
18	Cooling the Collective Motion of Trapped Ions to Initialize a Quantum Register. Physical Review Letters, 1998, 81, 1525-1528.	7.8	255

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19	Entanglement and Tunable Spin-Spin Couplings between Trapped Ions Using Multiple Transverse Modes. Physical Review Letters, 2009, 103, 120502.	7.8	248
20	Decoherence and decay of motional quantum states of a trapped atom coupled to engineered reservoirs. Physical Review A, 2000, 62, .	2.5	239
21	Modular entanglement of atomic qubits using photons and phonons. Nature Physics, 2015, 11, 37-42.	16.7	225
22	Quantum interference of photon pairs from two remote trapped atomic ions. Nature Physics, 2007, 3, 538-541.	16.7	219
23	Verified quantum information scrambling. Nature, 2019, 567, 61-65.	27.8	219
24	Ion trap in a semiconductor chip. Nature Physics, 2006, 2, 36-39.	16.7	194
25	Ground-state energy estimation of the water molecule on a trapped-ion quantum computer. Npj Quantum Information, 2020, 6, .	6.7	184
26	Fault-tolerant control of an error-corrected qubit. Nature, 2021, 598, 281-286.	27.8	170
27	Complete 3-Qubit Grover search on a programmable quantum computer. Nature Communications, 2017, 8, 1918.	12.8	153
28	Trapped Ion Quantum Computation with Transverse Phonon Modes. Physical Review Letters, 2006, 97, 050505.	7.8	151
29	Discrete Time Crystals. Annual Review of Condensed Matter Physics, 2020, 11, 467-499.	14.5	146
30	Quantum Computer Systems for Scientific Discovery. PRX Quantum, 2021, 2, .	9.2	142
31	Training of quantum circuits on a hybrid quantum computer. Science Advances, 2019, 5, eaaw9918.	10.3	134
32	Entanglement of Atomic Qubits Using an Optical Frequency Comb. Physical Review Letters, 2010, 104, 140501.	7.8	123
33	Optimal Quantum Control of Multimode Couplings between Trapped Ion Qubits for Scalable Entanglement. Physical Review Letters, 2014, 112, 190502.	7.8	122
34	Ion trap transducers for quantum electromechanical oscillators. Physical Review A, 2005, 72, .	2.5	107
35	Observation of a prethermal discrete time crystal. Science, 2021, 372, 1192-1196.	12.6	93
36	Arbitrary-speed quantum gates within large ion crystals through minimum control of laser beams. Europhysics Letters, 2006, 73, 485-491.	2.0	90

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37	Cryogenic trapped-ion system for large scale quantum simulation. Quantum Science and Technology, 2019, 4, 014004.	5.8	90
38	Robust 2-Qubit Gates in a Linear Ion Crystal Using a Frequency-Modulated Driving Force. Physical Review Letters, 2018, 120, 020501.	7.8	86
39	Towards analog quantum simulations of lattice gauge theories with trapped ions. Physical Review Research, 2020, 2, .	3.6	78
40	Planar ion trap geometry for microfabrication. Applied Physics B: Lasers and Optics, 2004, 78, 639-651.	2.2	77
41	Measuring the RÃ©nyi entropy of a two-site Fermi-Hubbard model on a trapped ion quantum computer. Physical Review A, 2018, 98, .	2.5	77
42	Coherent imaging spectroscopy of a quantum many-body spin system. Science, 2014, 345, 430-433.	12.6	72
43	Observation of Stark many-body localization without disorder. Nature, 2021, 599, 393-398.	27.8	69
44	Multispecies Trapped-Ion Node for Quantum Networking. Physical Review Letters, 2017, 118, 250502.	7.8	66
45	Generation of thermofield double states and critical ground states with a quantum computer. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 25402-25406.	7.1	66
46	Two-qubit entangling gates within arbitrarily long chains of trapped ions. Physical Review A, 2019, 100, .	2.5	59
47	Domain-wall confinement and dynamics in a quantum simulator. Nature Physics, 2021, 17, 742-747.	16.7	56
48	Demonstration of Two-Atom Entanglement with Ultrafast Optical Pulses. Physical Review Letters, 2017, 119, 230501.	7.8	54
49	Photon collection from a trapped ion-cavity system. Physical Review A, 2012, 85, .	2.5	49
50	Quantum Computing with Trapped Ion Hyperfine Qubits. Quantum Information Processing, 2004, 3, 45-59.	2.2	47
51	Quantum control of qubits and atomic motion using ultrafast laser pulses. Applied Physics B: Lasers and Optics, 2014, 114, 45-61.	2.2	46
52	Ultrafast creation of large SchrÃ¶dinger cat states of an atom. Nature Communications, 2017, 8, 697.	12.8	43
53	Magneto-optical trapping of cadmium. Physical Review A, 2007, 76, .	2.5	40
54	Protocols and techniques for a scalable atomâ€“photon quantum network. Fortschritte Der Physik, 2009, 57, 1133-1152.	4.4	39

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55	Efficient Ground-State Cooling of Large Trapped-Ion Chains with an Electromagnetically-Induced-Transparency Tripod Scheme. Physical Review Letters, 2020, 125, 053001.	7.8	36
56	Observation of Hopping and Blockade of Bosons in a Trapped Ion Spin Chain. Physical Review Letters, 2018, 120, 073001.	7.8	35
57	The U.S. National Quantum Initiative: From Act to action. Science, 2019, 364, 440-442.	12.6	31
58	Engineering large Stark shifts for control of individual clock state qubits. Physical Review A, 2016, 94, .	2.5	29
59	Toward convergence of effective-field-theory simulations on digital quantum computers. Physical Review A, 2019, 100, .	2.5	28
60	Quantum walks and Dirac cellular automata on a programmable trapped-ion quantum computer. Nature Communications, 2020, 11, 3720.	12.8	28
61	High-resolution adaptive imaging of a single atom. Nature Photonics, 2016, 10, 606-610.	31.4	24
62	Many-Body Dephasing in a Trapped-Ion Quantum Simulator. Physical Review Letters, 2020, 125, 120605.	7.8	23
63	High purity single photons entangled with an atomic qubit. Optics Express, 2019, 27, 28143.	3.4	23
64	Control of Transverse Motion for Quantum Gates on Individually Addressed Atomic Qubits. PRX Quantum, 2022, 3, .	9.2	23
65	Many-body thermodynamics on quantum computers via partition function zeros. Science Advances, 2021, 7, .	10.3	22
66	Probing many-body localization on a noisy quantum computer. Physical Review A, 2021, 103, .	2.5	17
67	Character of motional modes for entanglement and sympathetic cooling of mixed-species trapped-ion chains. Physical Review A, 2021, 103, .	2.5	15
68	Resource-Optimized Fermionic Local-Hamiltonian Simulation on a Quantum Computer for Quantum Chemistry. Quantum - the Open Journal for Quantum Science, 0, 5, 509.	0.0	12
69	Comparison of cloud-based ion trap and superconducting quantum computer architectures. AVS Quantum Science, 2021, 3, .	4.9	9
70	Quantum circuits for the realization of equivalent forms of one-dimensional discrete-time quantum walks on near-term quantum hardware. Physical Review A, 2021, 104, .	2.5	5
71	Quantum Repeaters Based on Two-Species Trapped Ions. , 2018, , .		2
72	ION TRAP NETWORKING: COLD, FAST, AND SMALL. , 2005, , .		1

#	Article	IF	Citations
73	Quantum Networking with Trapped Atomic Ions. , 0, , .		0
74	Scalable quantum computation with photons and trapped ions. , 2006, , .		0
75	Private random number generation through remote atom entanglement. , 2011, , .		0
76	Trapped ions for testing foundations of quantum theory. , 2012, , .		0