# 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 | Control of Transverse Motion for Quantum Gates on Individually Addressed Atomic Qubits. PRX Quantum, 2022, 3, . | 9.2 | 23 |
| 2 | Quantum Computer Systems for Scientific Discovery. PRX Quantum, 2021, 2, . | 9.2 | 142 |
| 3 | Probing many-body localization on a noisy quantum computer. Physical Review A, 2021, 103, . | 2.5 | 17 |
| 4 | Domain-wall confinement and dynamics in a quantum simulator. Nature Physics, 2021, 17, 742-747. | 16.7 | 56 |
| 5 | Programmable quantum simulations of spin systems with trapped ions. Reviews of Modern Physics, 2021, 93, . | 45.6 | 316 |
| 6 | Observation of a prethermal discrete time crystal. Science, 2021, 372, 1192-1196. | 12.6 | 93 |
| 7 | Many-body thermodynamics on quantum computers via partition function zeros. Science Advances, 2021, 7, . | 10.3 | 22 |
| 8 | Comparison of cloud-based ion trap and superconducting quantum computer architectures. AVS Quantum Science, 2021, 3, . | 4.9 | 9 |
| 9 | Character of motional modes for entanglement and sympathetic cooling of mixed-species trapped-ion chains. Physical Review A, 2021, 103, . | 2.5 | 15 |
| 10 | Fault-tolerant control of an error-corrected qubit. Nature, 2021, 598, 281-286. | 27.8 | 170 |
| 11 | Observation of Stark many-body localization without disorder. Nature, 2021, 599, 393-398. | 27.8 | 69 |
| 12 | 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 |
| 13 | 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 |
| 14 | 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 |
| 15 | Quantum walks and Dirac cellular automata on a programmable trapped-ion quantum computer. Nature Communications, 2020, 11, 3720. | 12.8 | 28 |
| 16 | Many-Body Dephasing in a Trapped-Ion Quantum Simulator. Physical Review Letters, 2020, 125, 120605. | 7.8 | 23 |
| 17 | Discrete Time Crystals. Annual Review of Condensed Matter Physics, 2020, 11, 467-499. | 14.5 | 146 |
| 18 | Ground-state energy estimation of the water molecule on a trapped-ion quantum computer. Npj Quantum Information, 2020, 6, . | 6.7 | 184 |

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|---|---|---|---|
| 19 | Towards analog quantum simulations of lattice gauge theories with trapped ions. Physical Review Research, 2020, 2, . | 3.6 | 78 |
| 20 | Training of quantum circuits on a hybrid quantum computer. Science Advances, 2019, 5, eaaw9918. | 10.3 | 134 |
| 21 | Two-qubit entangling gates within arbitrarily long chains of trapped ions. Physical Review A, 2019, 100, . | 2.5 | 59 |
| 22 | The U.S. National Quantum Initiative: From Act to action. Science, 2019, 364, 440-442. | 12.6 | 31 |
| 23 | Verified quantum information scrambling. Nature, 2019, 567, 61-65. | 27.8 | 219 |
| 24 | Toward convergence of effective-field-theory simulations on digital quantum computers. Physical Review A, 2019, 100, . | 2.5 | 28 |
| 25 | Benchmarking an 11-qubit quantum computer. Nature Communications, 2019, 10, 5464. | 12.8 | 307 |
| 26 | Cryogenic trapped-ion system for large scale quantum simulation. Quantum Science and Technology, 2019, 4, 014004. | 5.8 | 90 |
| 27 | High purity single photons entangled with an atomic qubit. Optics Express, 2019, 27, 28143. | 3.4 | 23 |
| 28 | Observation of Hopping and Blockade of Bosons in a Trapped Ion Spin Chain. Physical Review Letters, 2018, 120, 073001. | 7.8 | 35 |
| 29 | Robust 2-Qubit Gates in a Linear Ion Crystal Using a Frequency-Modulated Driving Force. Physical Review Letters, 2018, 120, 020501. | 7.8 | 86 |
| 30 | 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 |
| 31 | Quantum Repeaters Based on Two-Species Trapped Ions. , 2018, , . | | 2 |
| 32 | Observation of a discrete time crystal. Nature, 2017, 543, 217-220. | 27.8 | 764 |
| 33 | 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 |
| 34 | Ultrafast creation of large SchrÃ¶dinger cat states of an atom. Nature Communications, 2017, 8, 697. | 12.8 | 43 |
| 35 | Demonstration of Two-Atom Entanglement with Ultrafast Optical Pulses. Physical Review Letters, 2017, 119, 230501. | 7.8 | 54 |
| 36 | Multispecies Trapped-Ion Node for Quantum Networking. Physical Review Letters, 2017, 118, 250502. | 7.8 | 66 |

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|---|---|---|---|
| 37 | Complete 3-Qubit Grover search on a programmable quantum computer. Nature Communications, 2017, 8, 1918. | 12.8 | 153 |
| 38 | Engineering large Stark shifts for control of individual clock state qubits. Physical Review A, 2016, 94, . | 2.5 | 29 |
| 39 | Demonstration of a small programmable quantum computer with atomic qubits. Nature, 2016, 536, 63-66. | 27.8 | 549 |
| 40 | High-resolution adaptive imaging of a single atom. Nature Photonics, 2016, 10, 606-610. | 31.4 | 24 |
| 41 | Many-body localization in a quantum simulator with programmable random disorder. Nature Physics, 2016, 12, 907-911. | 16.7 | 657 |
| 42 | Modular entanglement of atomic qubits using photons and phonons. Nature Physics, 2015, 11, 37-42. | 16.7 | 225 |
| 43 | Large-scale modular quantum-computer architecture with atomic memory and photonic interconnects. Physical Review A, 2014, 89, . | 2.5 | 400 |
| 44 | Quantum control of qubits and atomic motion using ultrafast laser pulses. Applied Physics B: Lasers and Optics, 2014, 114, 45-61. | 2.2 | 46 |
| 45 | Coherent imaging spectroscopy of a quantum many-body spin system. Science, 2014, 345, 430-433. | 12.6 | 72 |
| 46 | Optimal Quantum Control of Multimode Couplings between Trapped Ion Qubits for Scalable Entanglement. Physical Review Letters, 2014, 112, 190502. | 7.8 | 122 |
| 47 | Scaling the Ion Trap Quantum Processor. Science, 2013, 339, 1164-1169. | 12.6 | 529 |
| 48 | Photon collection from a trapped ion-cavity system. Physical Review A, 2012, 85, . | 2.5 | 49 |
| 49 | Trapped ions for testing foundations of quantum theory. , 2012, , . | | 0 |
| 50 | Private random number generation through remote atom entanglement. , 2011, , . | | 0 |
| 51 | Colloquium: Quantum networks with trapped ions. Reviews of Modern Physics, 2010, 82, 1209-1224. | 45.6 | 421 |
| 52 | Entanglement of Atomic Qubits Using an Optical Frequency Comb. Physical Review Letters, 2010, 104, 140501. | 7.8 | 123 |
| 53 | Entanglement and Tunable Spin-Spin Couplings between Trapped Ions Using Multiple Transverse Modes. Physical Review Letters, 2009, 103, 120502. | 7.8 | 248 |
| 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 | Magneto-optical trapping of cadmium. Physical Review A, 2007, 76, . | 2.5 | 40 |
| 56 | 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 |
| 57 | Quantum interference of photon pairs from two remote trapped atomic ions. Nature Physics, 2007, 3, 538-541. | 16.7 | 219 |
| 58 | Entanglement of single-atom quantum bits at a distance. Nature, 2007, 449, 68-71. | 27.8 | 635 |
| 59 | Ion trap in a semiconductor chip. Nature Physics, 2006, 2, 36-39. | 16.7 | 194 |
| 60 | Arbitrary-speed quantum gates within large ion crystals through minimum control of laser beams. Europhysics Letters, 2006, 73, 485-491. | 2.0 | 90 |
| 61 | Scalable quantum computation with photons and trapped ions. , 2006, , . | | 0 |
| 62 | Trapped Ion Quantum Computation with Transverse Phonon Modes. Physical Review Letters, 2006, 97, 050505. | 7.8 | 151 |
| 63 | ION TRAP NETWORKING: COLD, FAST, AND SMALL. , 2005, , . | | 1 |
| 64 | Ion trap transducers for quantum electromechanical oscillators. Physical Review A, 2005, 72, . | 2.5 | 107 |
| 65 | Observation of entanglement between a single trapped atom and a single photon. Nature, 2004, 428, 153-157. | 27.8 | 563 |
| 66 | Quantum Computing with Trapped Ion Hyperfine Qubits. Quantum Information Processing, 2004, 3, 45-59. | 2.2 | 47 |
| 67 | Planar ion trap geometry for microfabrication. Applied Physics B: Lasers and Optics, 2004, 78, 639-651. | 2.2 | 77 |
| 68 | Quantum dynamics of single trapped ions. Reviews of Modern Physics, 2003, 75, 281-324. | 45.6 | 2,029 |
| 69 | Quantum information processing with atoms and photons. Nature, 2002, 416, 238-246. | 27.8 | 495 |
| 70 | Heating of trapped ions from the quantum ground state. Physical Review A, 2000, 61, . | 2.5 | 432 |
| 71 | Decoherence and decay of motional quantum states of a trapped atom coupled to engineered reservoirs. Physical Review A, 2000, 62, . | 2.5 | 239 |
| 72 | 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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|---|---|---|---|
| 73 | 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 |
| 74 | Resolved-Sideband Raman Cooling of a Bound Atom to the 3D Zero-Point Energy. Physical Review Letters, 1995, 75, 4011-4014. | 7.8 | 597 |
| 75 | Quantum Networking with Trapped Atomic Ions. , 0, , . | | 0 |
| 76 | 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 |