

Klaus Moelmer

List of Publications by Year in descending order

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132
papers

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126708

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133
times ranked

3693
citing authors

#	ARTICLE	IF	CITATIONS
1	A superradiant maser with nitrogen-vacancy center spins. <i>Science China: Physics, Mechanics and Astronomy</i> , 2022, 65, 1.	2.0	8
2	Active Frequency Measurement on Superradiant Strontium Clock Transitions. <i>Physical Review Letters</i> , 2022, 128, 013604.	2.9	3
3	Free-Fermion Multiply Excited Eigenstates and Their Experimental Signatures in 1D Arrays of Two-Level Atoms. <i>Physical Review Letters</i> , 2022, 128, 093602.	2.9	3
4	Deterministic Photon Sorting in Waveguide QED Systems. <i>Physical Review Letters</i> , 2022, 128, .	2.9	14
5	Cavity Quantum Electrodynamics Effects with Nitrogen Vacancy Center Spins Coupled to Room Temperature Microwave Resonators. <i>Physical Review Letters</i> , 2022, 128, .	2.9	8
6	Optical control of the complex phase of a quantum ground-state amplitude. <i>Physical Review A</i> , 2022, 105, .	1.0	1
7	Collective emission of photons from dense, dipole-dipole interacting atomic ensembles. <i>Physical Review A</i> , 2021, 103, .	1.0	5
8	Ultrarrow Superradiant Lasing by Dark Atom-Photon Dressed States. <i>Physical Review Letters</i> , 2021, 126, 123602.	2.9	14
9	Time-dependent atomic magnetometry with a recurrent neural network. <i>Physical Review A</i> , 2021, 103, .	1.0	10
10	Ancilla-mediated qubit readout and heralded entanglement between rare-earth dopant ions in crystals. <i>Physical Review A</i> , 2021, 103, .	1.0	2
11	More speed out of the quantum gate. <i>Nature Physics</i> , 2021, 17, 876-877.	6.5	0
12	Guessing the outcome of separate and joint quantum measurements of noncommuting observables. <i>Physical Review A</i> , 2021, 104, .	1.0	4
13	Quantum estimation of a time-dependent perturbation. <i>Physical Review A</i> , 2021, 104, .	1.0	5
14	Self-Stimulated Pulse Echo Trains from Inhomogeneously Broadened Spin Ensembles. <i>Physical Review Letters</i> , 2020, 125, 137702.	2.9	12
15	Retrodiction beyond the Heisenberg uncertainty relation. <i>Nature Communications</i> , 2020, 11, 5658.	5.8	16
16	Quantum interactions with pulses of radiation. <i>Physical Review A</i> , 2020, 102, .	1.0	25
17	Integration of the Berry curvature on a qubit state manifold by coupling to a quantum meter system. <i>Physical Review A</i> , 2020, 102, .	1.0	1
18	Subradiant Emission from Regular Atomic Arrays: Universal Scaling of Decay Rates from the Generalized Bloch Theorem. <i>Physical Review Letters</i> , 2020, 125, 253601.	2.9	25

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19	Editorial Expression of Concern: Exploring the quantum speed limit with computer games. Nature, 2020, 581, E7-E7.	13.7	0
20	Spin squeezing of 1011 atoms by prediction and retrodiction measurements. Nature, 2020, 581, 159-163.	13.7	83
21	Fast Multiqubit Gates by Adiabatic Evolution in Interacting Excited-State Manifolds of Rydberg Atoms and Superconducting Circuits. Physical Review X, 2020, 10, .	2.8	47
22	Position- and momentum-squeezed quantum states in micro-scale mechanical resonators. Modern Physics Letters B, 2020, 34, 2050193.	1.0	2
23	Revealing the strokes of autonomous quantum heat engines with work and heat fluctuations. Physical Review A, 2020, 101, .	1.0	8
24	Estimating a fluctuating magnetic field with a continuously monitored atomic ensemble. Physical Review A, 2020, 102, .	1.0	14
25	Subradiant bound dimer excited states of emitter chains coupled to a one dimensional waveguide. Physical Review Research, 2020, 2, .	1.3	46
26	Collective dynamics of inhomogeneously broadened emitters coupled to an optical cavity with narrow linewidth. Physical Review A, 2019, 100, .	1.0	15
27	Aging of a quantum battery. Physical Review A, 2019, 100, .	1.0	55
28	Input-Output Theory with Quantum Pulses. Physical Review Letters, 2019, 123, 123604.	2.9	62
29	Theory of Subradiant States of a One-Dimensional Two-Level Atom Chain. Physical Review Letters, 2019, 122, 203605.	2.9	112
30	Surface Plasmon Launching by Polariton Superradiance. ACS Photonics, 2019, 6, 871-877.	3.2	18
31	Adiabatic preparation of squeezed states of oscillators and large spin systems coupled to a two-level system. Physical Review A, 2019, 99, .	1.0	5
32	Amplified emission and lasing in a plasmonic nanolaser with many three-level molecules. Physical Review A, 2018, 97, .	1.0	3
33	Lasing in the superradiant crossover regime. Physical Review A, 2018, 98, .	1.0	36
34	Monte-Carlo simulations of superradiant lasing. New Journal of Physics, 2018, 20, 112001.	1.2	26
35	Deterministic Free-Space Source of Single Photons Using Rydberg Atoms. Physical Review Letters, 2018, 121, 123605.	2.9	23
36	Dicke phase transition in a disordered emitter-graphene-plasmon system. Physical Review A, 2018, 98, .	1.0	5

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37	Multistate and multihypothesis discrimination with open quantum systems. <i>Physical Review A</i> , 2018, 97, .	1.0	7
38	Hypothesis testing with a continuously monitored quantum system. <i>Physical Review A</i> , 2018, 98, .	1.0	6
39	Entangled Quantum Dynamics of Many-Body Systems using Bohmian Trajectories. <i>Scientific Reports</i> , 2018, 8, 12704.	1.6	12
40	Critical slowing down of multiatom entanglement by Rydberg blockade. <i>Physical Review A</i> , 2018, 98, .	1.0	3
41	The quantum vibes of atoms and ichthyosaurs. <i>Musicology</i> , 2018, , 51-59.	0.1	0
42	Blueprint for a microwave trapped ion quantum computer. <i>Science Advances</i> , 2017, 3, e1601540.	4.7	189
43	Random search for a dark resonance. <i>Physical Review A</i> , 2017, 95, .	1.0	3
44	Analysis of a Multimode Plasmonic Nanolaser with an Inhomogeneous Distribution of Molecular Emitters. <i>Journal of Physical Chemistry C</i> , 2017, 121, 15339-15347.	1.5	2
45	Proposal for detecting a single electron spin in a microwave resonator. <i>Physical Review A</i> , 2017, 95, .	1.0	44
46	High-fidelity Rydberg quantum gate via a two-atom dark state. <i>Physical Review A</i> , 2017, 96, .	1.0	84
47	Reversed interplay of quantum interference and which-way information in multiphoton entangled states. <i>Physical Review A</i> , 2017, 96, .	1.0	3
48	Sequentially generated entanglement, macroscopicity, and squeezing in a spin chain. <i>Physical Review A</i> , 2017, 96, .	1.0	3
49	Relaxation of an ensemble of two-level emitters in a squeezed bath. <i>Physical Review A</i> , 2017, 96, .	1.0	2
50	Conditioned spin and charge dynamics of a single-electron quantum dot. <i>Physical Review A</i> , 2017, 96, .	1.0	3
51	Measurement of the topological Chern number by continuous probing of a qubit subject to a slowly varying Hamiltonian. <i>Physical Review A</i> , 2017, 96, .	1.0	7
52	Statistical signatures of states orthogonal to the Fock-state ladder of composite bosons. <i>Physical Review A</i> , 2016, 94, .	1.0	9
53	Exploring the quantum speed limit with computer games. <i>Nature</i> , 2016, 532, 210-213.	13.7	91
54	Macroscopic entanglement in many-particle quantum states. <i>Physical Review A</i> , 2016, 93, .	1.0	11

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55	Theoretical study of plasmonic lasing in junctions with many molecules. <i>Physical Review B</i> , 2016, 94, .	1.1	4
56	Closing a quantum feedback loop inside a cryostat: Autonomous state preparation and long-time memory of a superconducting qubit. <i>Physical Review A</i> , 2016, 93, .	1.0	11
57	Counterdiabatic driving in spin squeezing and Dicke-state preparation. <i>Physical Review A</i> , 2016, 93, .	1.0	11
58	Single-atom single-photon coupling facilitated by atomic-ensemble dark-state mechanisms. <i>Physical Review A</i> , 2016, 94, .	1.0	26
59	Quantum teleportation with continuous measurements. <i>Physical Review A</i> , 2016, 94, .	1.0	10
60	Hong-Ou-Mandel Interference between Two Deterministic Collective Excitations in an Atomic Ensemble. <i>Physical Review Letters</i> , 2016, 117, 180501.	2.9	31
61	Dispersive coupling between light and a rare-earth-ion-doped mechanical resonator. <i>Physical Review A</i> , 2016, 94, .	1.0	19
62	Intensity and amplitude correlations in the fluorescence from atoms with interacting Rydberg states. <i>Physical Review A</i> , 2015, 92, .	1.0	12
63	Squeezing and Entanglement of Density Oscillations in a Bose-Einstein Condensate. <i>Physical Review Letters</i> , 2015, 115, 060401.	2.9	39
64	Correlation functions and conditioned quantum dynamics in photodetection theory. <i>Physica Scripta</i> , 2015, 90, 128004.	1.2	24
65	Spin memories in for the long haul. <i>Nature</i> , 2015, 517, 153-154.	13.7	10
66	Hypothesis Testing with Open Quantum Systems. <i>Physical Review Letters</i> , 2015, 114, 040401.	2.9	14
67	Adiabatic tracking of quantum many-body dynamics. <i>Physical Review A</i> , 2014, 90, .	1.0	114
68	Binding Potentials and Interaction Gates between Microwave-Dressed Rydberg Atoms. <i>Physical Review Letters</i> , 2014, 113, 123003.	2.9	48
69	Stringent and Efficient Assessment of Boson-Sampling Devices. <i>Physical Review Letters</i> , 2014, 113, 020502.	2.9	100
70	Quantized resonator field coupled to a current-biased Josephson junction in circuit QED. <i>Physical Review A</i> , 2014, 89, .	1.0	10
71	Fisher Information and the Quantum Cram�r-Rao Sensitivity Limit of Continuous Measurements. <i>Physical Review Letters</i> , 2014, 112, 170401.	2.9	91
72	Estimation of atomic interaction parameters by photon counting. <i>Physical Review A</i> , 2014, 89, .	1.0	33

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73	Needle in a haystack. <i>Nature Physics</i> , 2014, 10, 707-708.	6.5	0
74	How bosonic is a pair of fermions?. <i>Applied Physics B: Lasers and Optics</i> , 2014, 117, 785-796.	1.1	14
75	Dark Entangled Steady States of Interacting Rydberg Atoms. <i>Physical Review Letters</i> , 2013, 111, 033606.	2.9	103
76	Directional emission of single photons from small atomic samples. <i>Physical Review A</i> , 2013, 87, .	1.0	30
77	Bayesian parameter inference from continuously monitored quantum systems. <i>Physical Review A</i> , 2013, 87, .	1.0	73
78	Past Quantum States of a Monitored System. <i>Physical Review Letters</i> , 2013, 111, 160401.	2.9	118
79	Two-boson composites. <i>Physical Review A</i> , 2013, 88, .	1.0	10
80	Squeezing of collective excitations in spin ensembles. <i>Physical Review A</i> , 2012, 86, .	1.0	6
81	Bosonic behavior of entangled fermions. <i>Physical Review A</i> , 2012, 86, .	1.0	24
82	Spin squeezing and Schrödinger-cat-state generation in atomic samples with Rydberg blockade. <i>Physical Review A</i> , 2012, 86, .	1.0	30
83	Manipulation of qubits in nonorthogonal collective storage modes. <i>Physical Review A</i> , 2012, 86, .	1.0	1
84	Quantum computation architecture using optical tweezers. <i>Physical Review A</i> , 2011, 84, .	1.0	51
85	Dynamics of the collective modes of an inhomogeneous spin ensemble in a cavity. <i>Physical Review A</i> , 2011, 83, .	1.0	11
86	Cavity quantum electrodynamics with a Rydberg-blocked atomic ensemble. <i>Physical Review A</i> , 2010, 82, .	1.0	68
87	Cooling a micromechanical resonator to its ground state by measurement and feedback. <i>Physical Review A</i> , 2009, 80, .	1.0	5
88	Correlations in local measurements on a quantum state, and complementarity as an explanation of nonclassicality. <i>Physical Review A</i> , 2009, 80, .	1.0	111
89	Dynamical programming of continuously observed quantum systems. <i>Physical Review A</i> , 2009, 79, .	1.0	18
90	Complementarity of information sent via different bases. <i>Physical Review A</i> , 2009, 79, .	1.0	4

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91	Entropic uncertainty relation for mutually unbiased bases. Physical Review A, 2009, 79, .	1.0	93
92	Quantum fluctuations in the image of a Bose gas. Physical Review A, 2008, 78, .	1.0	19
93	Quantum-limited position measurements of a dark matter-wave soliton. Physical Review A, 2008, 77, .	1.0	10
94	Holographic Quantum Computing. Physical Review Letters, 2008, 101, 040501.	2.9	81
95	Atomic diffraction in counterpropagating Gaussian pulses of laser light. Physical Review A, 2007, 76, .	1.0	4
96	Association of heteronuclear molecules in a harmonic oscillator well. Physical Review A, 2007, 76, .	1.0	14
97	Fidelities for transformations of unknown quantum states. Physical Review A, 2006, 73, .	1.0	5
98	Phase-matched matter wave collisions in periodic potentials. New Journal of Physics, 2006, 8, 170-170.	1.2	5
99	Estimation of fluctuating magnetic fields by an atomic magnetometer. Physical Review A, 2006, 74, .	1.0	19
100	Entanglement between remote continuous-variable quantum systems: Effects of transmission loss. Physical Review A, 2006, 74, .	1.0	0
101	Polarization Squeezing by Optical Faraday Rotation. Physical Review Letters, 2006, 97, 143602.	2.9	27
102	Ion Trap Quantum Computer with Bichromatic Light. , 2005, , 41-51.		0
103	Spin squeezing and precision probing with light and samples of atoms in the Gaussian description. Physical Review A, 2004, 70, .	1.0	92
104	Estimation of a classical parameter with Gaussian probes: Magnetometry with collective atomic spins. Physical Review A, 2004, 70, .	1.0	40
105	Quantum computing with an inhomogeneously broadened ensemble of ions: Suppression of errors from detuning variations by specially adapted pulses and coherent population trapping. Physical Review A, 2004, 69, .	1.0	86
106	Interaction-induced phase fluctuations in a guided atom laser. Physical Review A, 2003, 67, .	1.0	3
107	Jaynes-Cummings Dynamics with a Matter Wave Oscillator. Physical Review Letters, 2003, 90, 110403.	2.9	22
108	GEOMETRIC CONSTRUCTION OF MULTI-BIT QUANTUM GATES. , 2003, , .		0

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109	Entanglement of two atomic samples by quantum-nondemolition measurements. Physical Review A, 2002, 66, .	1.0	19
110	Preparation of spin-squeezed atomic states by optical-phase-shift measurement. Physical Review A, 2002, 66, .	1.0	26
111	Approximate quantum data storage and teleportation. Physical Review A, 2002, 65, .	1.0	2
112	Quantum beam splitter for atoms. Physical Review A, 2002, 65, .	1.0	15
113	Macroscopic quantum-state reduction: Uniting Bose-Einstein condensates by interference measurements. Physical Review A, 2002, 65, .	1.0	12
114	Symmetric rotor of lithiumlike hollow atoms. Physical Review A, 2002, 65, .	1.0	9
115	Rotational structure in multiply excited atoms. Physical Review A, 2001, 64, .	1.0	5
116	Spin squeezing in the Ising model. Physical Review A, 2001, 64, .	1.0	32
117	Multibit Gates for Quantum Computing. Physical Review Letters, 2001, 86, 3907-3910.	2.9	104
118	Squeezed Light from Spin-Squeezed Atoms. Physical Review Letters, 2001, 87, 123601.	2.9	36
119	Correlated Electrons in Lithiumlike Hollow Atoms. Physical Review Letters, 2001, 87, 133002.	2.9	10
120	Ion Trap Quantum Computer with Bichromatic Light. Fortschritte Der Physik, 2000, 48, 811-821.	1.5	5
121	Reply to "Comment on "Optical coherence: A convenient fiction"™". Physical Review A, 1998, 58, 4247-4247.	1.0	20
122	Error-free quantum communication through noisy channels. Physical Review A, 1998, 58, 2745-2749.	1.0	31
123	Bose-Einstein condensates in spatially periodic potentials. Physical Review A, 1998, 58, 1480-1484.	1.0	133
124	Superradiance in a structured radiation reservoir. Physical Review A, 1998, 57, 3065-3073.	1.0	23
125	Fluorescence into Flat and Structured Radiation Continua: An Atomic Density Matrix without a Master Equation. Physical Review Letters, 1997, 79, 2654-2657.	2.9	92
126	Atom-atom interaction in strongly modified reservoirs. Physical Review A, 1997, 55, 1485-1496.	1.0	107

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127	Diffuse atomic reflection at a rough mirror. Physical Review A, 1997, 55, 1160-1178.	1.0	32
128	Atomic diffraction assisted by a stimulated Raman transition. Physical Review A, 1997, 56, R9-R12.	1.0	6
129	Monte Carlo Wavefunctions. , 1996, , 193-202.		0
130	Monte Carlo Wave-Function Analysis of 3D Optical Molasses. Physical Review Letters, 1995, 74, 3772-3775.	2.9	82
131	Wave-function approach to dissipative processes in quantum optics. Physical Review Letters, 1992, 68, 580-583.	2.9	1,508
132	Photon-photon interactions in Rydberg-atom arrays. Quantum - the Open Journal for Quantum Science, 0, 6, 674.	0.0	21