Klemens Hammerer

List of Publications by Year
in descending order

107 papers	7,514 citations	61984 43 h-index	53230 85 g-index
107 all docs	107 docs citations	107 times ranked	4991 citing authors

#	Article	IF	Citations
1	Quantum interface between light and atomic ensembles. Reviews of Modern Physics, 2010, 82, 1041-1093.	45.6	969
2	Observation of strong coupling between a micromechanical resonator and an optical cavity field. Nature, 2009, 460, 724-727.	27.8	848
3	Quantum teleportation between light and matter. Nature, 2006, 443, 557-560.	27.8	644
4	Quantum optomechanicsâ€"throwing a glance [Invited]. Journal of the Optical Society of America B: Optical Physics, 2010, 27, A189.	2.1	247
5	Hybrid quantum devices and quantum engineering. Physica Scripta, 2009, T137, 014001.	2.5	243
6	Pulsed quantum optomechanics. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 16182-16187.	7.1	231
7	Quantum entanglement and teleportation in pulsed cavity optomechanics. Physical Review A, 2011, 84, .	2.5	199
8	Strong Coupling of a Mechanical Oscillator and a Single Atom. Physical Review Letters, 2009, 103, 063005.	7.8	192
9	Cavity-assisted squeezing of a mechanical oscillator. Physical Review A, 2009, 79, .	2.5	178
10	Establishing Einstein-Poldosky-Rosen Channels between Nanomechanics and Atomic Ensembles. Physical Review Letters, 2009, 102, 020501.	7.8	155
11	Quantum back-action-evading measurement of motion in a negative mass reference frame. Nature, 2017, 547, 191-195.	27.8	153
12	Quantum Benchmark for Storage and Transmission of Coherent States. Physical Review Letters, 2005, 94, 150503.	7.8	147
13	Dissipative Optomechanics in a Michelson-Sagnac Interferometer. Physical Review Letters, 2011, 107, 213604.	7.8	122
14	Optomechanical Sensing of Spontaneous Wave-Function Collapse. Physical Review Letters, 2014, 113, 020405.	7.8	114
15	Quantum Signatures of the Optomechanical Instability. Physical Review Letters, 2012, 109, 253601.	7.8	103
16	Single-atom cavity QED and optomicromechanics. Physical Review A, 2010, 81, .	2.5	101
17	Anyonic interferometry and protected memories in atomic spin lattices. Nature Physics, 2008, 4, 482-488.	16.7	97
18	Light-matter quantum interface. Physical Review A, 2004, 70, .	2.5	95

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19	Simulating open quantum systems: from many-body interactions to stabilizer pumping. New Journal of Physics, 2011, 13, 085007.	2.9	89
20	Observation of Generalized Optomechanical Coupling and Cooling on Cavity Resonance. Physical Review Letters, 2015, 114, 043601.	7.8	89
21	Sequential generation of matrix-product states in cavity QED. Physical Review A, 2007, 75, .	2.5	86
22	Entanglement of mechanical oscillators coupled to a nonequilibrium environment. Physical Review A, 2010, 82, .	2.5	85
23	Satisfying the Einsteinâ€“Podolskyâ€“Rosen criterion with massive particles. Nature Communications, 2015, 6, 8984.	12.8	85
24	Phase-noise induced limitations on cooling and coherent evolution in optomechanical systems. Physical Review A, 2009, 80, .	2.5	84
25	Interaction Cost of Nonlocal Gates. Physical Review Letters, 2002, 88, 237902.	7.8	75
26	Optimal State Estimation for Cavity Optomechanical Systems. Physical Review Letters, 2015, 114, 223601.	7.8	75
27	Efficient quantum repeater based on deterministic Rydberg gates. Physical Review A, 2010, 81, .	2.5	71
28	Dynamics of Many-Body Photon Bound States in Chiral Waveguide QED. Physical Review X, 2020, 10, .	8.9	71
29	Characterization of nonlocal gates. Physical Review A, 2002, 66, .	2.5	70
30	Strongly Correlated Photon Transport in Waveguide Quantum Electrodynamics with Weakly Coupled Emitters. Physical Review Letters, 2018, 121, 143601.	7.8	67
31	Correlating photons using the collective nonlinear response of atoms weakly coupled to an optical mode. Nature Photonics, 2020, 14, 719-722.	31.4	64
32	ELGARâ€”a European Laboratory for Gravitation and Atom-interferometric Research. Classical and Quantum Gravity, 2020, 37, 225017.	4.0	63
33	Cavity-enhanced long-distance coupling of an atomic ensemble to a micromechanical membrane. Physical Review A, 2013, 87, .	2.5	60
34	Robust and Resource-Efficient Microwave Near-Field Entangling <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:msup><mml:mrow><mml:mi>Be</mml:mi></mml:mrow><mml:n /><mml:none /><mml:mrow><mml:mn>9</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math> Gate. Physical Review Letters, 2019, 123, 260503.	7.8	59
35	Motional Fock states for quantum-enhanced amplitude and phase measurements with trapped ions. Nature Communications, 2019, 10, 2929.	12.8	58
36	Optical lattices with micromechanical mirrors. Physical Review A, 2010, 82, .	2.5	57

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37	Entanglement generation and Hamiltonian simulation in continuous-variable systems. Physical Review A, 2003, 67, .	2.5	54
38	Efficient quantum memory and entanglement between light and an atomic ensemble using magnetic fields. Physical Review A, 2006, 73, .	2.5	53
39	Hybrid Mechanical Systems. , 2014, , 327-351.		53
40	Laser Theory for Optomechanics: Limit Cycles in the Quantum Regime. Physical Review X, 2014, 4, .	8.9	51
41	Coherent cancellation of backaction noise in optomechanical force measurements. Physical Review A, 2014, 89, .	2.5	50
42	Ground-state cooling of a nanomechanical resonator via a Cooper-pair box qubit. New Journal of Physics, 2008, 10, 095019.	2.9	49
43	Light-mediated strong coupling between a mechanical oscillator and atomic spins 1 meter apart. Science, 2020, 369, 174-179.	12.6	48
44	Precision spectroscopy by photon-recoil signal amplification. Nature Communications, 2014, 5, 3096.	12.8	47
45	Teleportation and spin squeezing utilizing multimode entanglement of light with atoms. Physical Review A, 2005, 72, .	2.5	44
46	Entanglement-enhanced time-continuous quantum control in optomechanics. Physical Review A, 2015, 91, .	2.5	44
47	Trajectories without quantum uncertainties. Annalen Der Physik, 2015, 527, A15.	2.4	41
48	Simulating Quantum Fields with Cavity QED. Physical Review Letters, 2013, 110, 090501.	7.8	38
49	Twin-lattice atom interferometry. Nature Communications, 2021, 12, 2544.	12.8	37
50	A single trapped atom in front of an oscillating mirror. Optics Communications, 2010, 283, 758-765.	2.1	36
51	Anomalous dynamic backaction in interferometers. Physical Review A, 2013, 88, .	2.5	35
52	Exploring Interacting Quantum Many-Body Systems by Experimentally Creating Continuous Matrix Product States in Superconducting Circuits. Physical Review X, 2015, 5, .	8.9	32
53	Master equation for the motion of a polarizable particle in a multimode cavity. New Journal of Physics, 2010, 12, 083003.	2.9	30
54	Prospects and challenges for squeezing-enhanced optical atomic clocks. Nature Communications, 2020, 11, 5955.	12.8	30

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55	Quantum Variational Optimization of Ramsey Interferometry and Atomic Clocks. Physical Review X, 2021, 11, .	8.9	30
56	Ramsey interferometry with generalized one-axis twisting echoes. Quantum - the Open Journal for Quantum Science, 0, 4, 268.	0.0	28
57	Long distance coupling of a quantum mechanical oscillator to the internal states of an atomic ensemble. New Journal of Physics, 2015, 17, 043044.	2.9	26
58	Measurement-induced long-distance entanglement of superconducting qubits using optomechanical transducers. Physical Review A, 2016, 94, .	2.5	26
59	Time-Continuous Bell Measurements. Physical Review Letters, 2013, 111, 170404.	7.8	24
60	Sub-Poissonian phonon lasing in three-mode optomechanics. Physical Review A, 2015, 91, .	2.5	24
61	Quantum Algorithmic Readout in Multi-Ion Clocks. Physical Review Letters, 2016, 116, 013002.	7.8	23
62	Light-Mediated Collective Atomic Motion in an Optical Lattice Coupled to a Membrane. Physical Review Letters, 2018, 120, 073602.	7.8	22
63	Integrated 9Be+ multi-qubit gate device for the ion-trap quantum computer. Npj Quantum Information, 2019, 5, .	6.7	22
64	Quantum information at the interface of light with atomic ensembles and micromechanical oscillators. Quantum Information Processing, 2011, 10, 839-863.	2.2	21
65	Stationary optomechanical entanglement between a mechanical oscillator and its measurement apparatus. Physical Review Research, 2020, 2, .	3.6	21
66	Optomechanical multimode Hamiltonian for nanophotonic waveguides. Physical Review A, 2016, 94, .	2.5	20
67	Unconditional Steady-State Entanglement in Macroscopic Hybrid Systems by Coherent Noise Cancellation. Physical Review Letters, 2018, 121, 103602.	7.8	19
68	Remote Hamiltonian interactions mediated by light. Physical Review A, 2019, 99, .	2.5	19
69	Proposal to Test Bellâ€™s Inequality in Electromechanics. Physical Review Letters, 2016, 116, 070406.	7.8	18
70	Inertial sensing with quantum gases: a comparative performance study of condensed versus thermal sources for atom interferometry. European Physical Journal D, 2021, 75, 1.	1.3	18
71	Dynamics of coupled multimode and hybrid optomechanical systems. Comptes Rendus Physique, 2011, 12, 837-847.	0.9	17
72	Spatially Adiabatic Frequency Conversion in Optoelectromechanical Arrays. Physical Review Letters, 2018, 121, 110506.	7.8	17

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73	Quantum Nonlinear Optics in Optomechanical Nanoscale Waveguides. Physical Review Letters, 2017, 119, 123602.	7.8	16
74	Adiabatic elimination of Gaussian subsystems from quantum dynamics under continuous measurement. Physical Review A, 2015, 92, .	2.5	15
75	High-fidelity teleportation between light and atoms. Physical Review A, 2006, 74, .	2.5	14
76	Quantum noise for Faraday lightâ€“matter interfaces. Journal of Physics B: Atomic, Molecular and Optical Physics, 2012, 45, 124007.	1.5	14
77	Unraveling Two-Photon Entanglement via the Squeezing Spectrum of Light Traveling through Nanofiber-Coupled Atoms. Physical Review Letters, 2021, 127, 123602.	7.8	14
78	Quantum feedback cooling of a mechanical oscillator using variational measurements: tweaking Heisenbergâ€™s microscope. Journal of Optics (United Kingdom), 2016, 18, 084004.	2.2	13
79	Analytic theory for Bragg atom interferometry based on the adiabatic theorem. Physical Review A, 2020, 102, .	2.5	13
80	Exciton-mediated photothermal cooling in GaAs membranes. New Journal of Physics, 2012, 14, 085024.	2.9	10
81	Open-system many-body dynamics through interferometric measurements and feedback. Physical Review A, 2016, 94, .	2.5	10
82	Quantum Teleportation of Dynamics and Effective Interactions between Remote Systems. Physical Review Letters, 2013, 111, 020501.	7.8	9
83	Dissipative versus conditional generation of Gaussian entanglement and spin squeezing. Physical Review A, 2013, 87, .	2.5	9
84	Synchronization of active atomic clocks via quantum and classical channels. Physical Review A, 2016, 94, .	2.5	9
85	Nonclassical States of Light and Mechanics. , 2014, , 25-56.		8
86	Generalized analysis of quantum noise and dynamic backaction in signal-recycled Michelson-type laser interferometers. Physical Review A, 2016, 94, .	2.5	8
87	Universal atom interferometer simulation of elastic scattering processes. Scientific Reports, 2020, 10, 22120.	3.3	8
88	Quantum logic inspired techniques for spacetime-symmetry tests with (anti-)protons. New Journal of Physics, 2021, 23, 073045.	2.9	7
89	Quantum Control of Optomechanical Systems. Advances in Atomic, Molecular and Optical Physics, 2017, 66, 263-374.	2.3	5
90	Deterministic Quantum Interface between Light and Atomic Ensembles. , 2007, , 513-551.		4

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91	Diamonds take off. Nature Photonics, 2015, 9, 633-634.	31.4	3
92	Elementary Laserâ€Less Quantum Logic Operations with (Antiâ€)Protons in Penning Traps. Advanced Quantum Technologies, 2020, 3, 1900133.	3.9	3
93	Quantum Mechanics Tackles Mechanics. Science, 2013, 342, 702-703.	12.6	2
94	Concepts and research for future detectors. General Relativity and Gravitation, 2014, 46, 1.	2.0	2
95	Photon-recoil spectroscopy: Systematic shifts and nonclassical enhancements. Physical Review A, 2018, 98, .	2.5	2
96	Publisherâ€™s Note: Dissipative Optomechanics in a Michelson-Sagnac Interferometer [Phys. Rev. Lett.107, 213604 (2011)]. Physical Review Letters, 2011, 107, .	7.8	1
97	Publisherâ€™s Note: Laser Theory for Optomechanics: Limit Cycles in the Quantum Regime [Phys. Rev. X 4, 011015 (2014)]. Physical Review X, 2014, 4, .	8.9	1
98	Satisfying the Einstein-Podolsky-Rosen criterion with massive particles. Proceedings of SPIE, 2016, , .	0.8	1
99	Ultracold atoms coupled to micro- and nanomechanical oscillators: Towards hybrid quantum systems. , 2009, , .		0
100	Spinning oscillators. Nature Physics, 2013, 9, 462-463.	16.7	0
101	KÃ¼hlen von groÃŸen Objekten mit Laserlicht. Physik in Unserer Zeit, 2015, 46, 162-163.	0.0	0
102	Correlating Photons Using the Collective Nonlinear Response of Atoms Weakly Coupled to an Optical Mode. , 2021, , .		0
103	Quantum-Opto-Mechanics in the Strong Coupling Regime. , 2010, , .		0
104	Quantum Optomechanics: State Engineering, Hybrid Systems and Dissipative Coupling. , 2012, , .		0
105	Time Continuous Bell Measurements. , 2014, , .		0
106	Quantum Back Action Evading Measurements in a Spin-Mechanics Hybrid System. , 2017, , .		0
107	Numerical optimization of amplitude-modulated pulses in microwave-driven entanglement generation. Quantum Science and Technology, 2022, 7, 045005.	5.8	0