Morgan Mitchell

List of Publications by Year
in descending order

189 papers	9,880 citations	61984 43 h-index	36028 97 g-index
192 all docs	192 docs citations	192 times ranked	5830 citing authors

#	Article	IF	Citations
1	Loophole-free Bell inequality violation using electron spins separated by 1.3 kilometres. Nature, 2015, 526, 682-686.	27.8	1,762
2	Significant-Loophole-Free Test of Bellâ€™s Theorem with Entangled Photons. Physical Review Letters, 2015, 115, 250401.	7.8	932
3	Strong Loophole-Free Test of Local Realism. Physical Review Letters, 2015, 115, 250402.	7.8	910
4	Super-resolving phase measurements with a multiphoton entangled state. Nature, 2004, 429, 161-164.	27.8	720
5	Quantum-enhanced measurements without entanglement. Reviews of Modern Physics, 2018, 90, .	45.6	257
6	Magnetic Sensitivity Beyond the Projection Noise Limit by Spin Squeezing. Physical Review Letters, 2012, 109, 253605.	7.8	217
7	Interaction-based quantum metrology showing scaling beyond the Heisenberg limit. Nature, 2011, 471, 486-489.	27.8	185
8	Simulation of non-Abelian gauge theories with optical lattices. Nature Communications, 2013, 4, 2615.	12.8	165
9	Squeezed-Light Optical Magnetometry. Physical Review Letters, 2010, 105, 053601.	7.8	163
10	Simple Proof of Equivalence between Adiabatic Quantum Computation and the Circuit Model. Physical Review Letters, 2007, 99, 070502.	7.8	161
11	Quantitative topographic analysis of fractal surfaces by scanning tunneling microscopy. Journal of Materials Research, 1990, 5, 2244-2254.	2.6	147
12	Causality and negative group delays in a simple bandpass amplifier. American Journal of Physics, 1998, 66, 14-19.	0.7	146
13	Negative group delay and â€œfrontsâ€•in a causal system: An experiment with very low frequency bandpass amplifiers. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 230, 133-138.	2.1	139
14	How to perform the most accurate possible phase measurements. Physical Review A, 2009, 80, .	2.5	139
15	Challenging local realism with human choices. Nature, 2018, 557, 212-216.	27.8	136
16	Entanglement-enhanced probing of a delicate material system. Nature Photonics, 2013, 7, 28-32.	31.4	132
17	A double-slit â€˜which-wayâ€™ experiment on the complementarityâ€“uncertainty debate. New Journal of Physics, 2007, 9, 287-287.	2.9	131
18	True random numbers from amplified quantum vacuum. Optics Express, 2011, 19, 20665.	3.4	128

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19	Sub-Projection-Noise Sensitivity in Broadband Atomic Magnetometry. Physical Review Letters, 2010, 104, 093602.	7.8	119
20	Ultra-fast quantum randomness generation by accelerated phase diffusion in a pulsed laser diode. Optics Express, 2014, 22, 1645.	3.4	114
21	Entangled photons, nonlocality, and Bell inequalities in the undergraduate laboratory. American Journal of Physics, 2002, 70, 903-910.	0.7	108
22	Demonstrating Heisenberg-limited unambiguous phase estimation without adaptive measurements. New Journal of Physics, 2009, 11, 073023.	2.9	99
23	Diagnosis, Prescription, and Prognosis of a Bell-State Filter by Quantum Process Tomography. Physical Review Letters, 2003, 91, 120402.	7.8	91
24	Generation of Fresh and Pure Random Numbers for Loophole-Free Bell Tests. Physical Review Letters, 2015, 115, 250403.	7.8	88
25	Quantum entropy source on an InP photonic integrated circuit for random number generation. Optica, 2016, 3, 989.	9.3	84
26	A high-brightness source of polarization-entangled photons optimized for applications in free space. Optics Express, 2012, 20, 9640.	3.4	79
27	Ultranarrow Faraday rotation filter at the Rb D_1 line. Optics Letters, 2012, 37, 524.	3.3	78
28	Randomness in quantum mechanics: philosophy, physics and technology. Reports on Progress in Physics, 2017, 80, 124001.	20.1	72
29	Bright filter-free source of indistinguishable photon pairs. Optics Express, 2008, 16, 18145.	3.4	70
30	Atom-Resonant Heralded Single Photons by Interaction-Free Measurement. Physical Review Letters, 2011, 106, 053602.	7.8	70
31	Quantum Nondemolition Measurement of Large-Spin Ensembles by Dynamical Decoupling. Physical Review Letters, 2010, 105, 093602.	7.8	65
32	Entangled photon apparatus for the undergraduate laboratory. American Journal of Physics, 2002, 70, 898-902.	0.7	60
33	Simultaneous tracking of spin angle and amplitude beyond classical limits. Nature, 2017, 543, 525-528.	27.8	59
34	Polarization-based light-atom quantum interface with an all-optical trap. Physical Review A, 2009, 79, .	2.5	58
35	Tunable narrowband entangled photon pair source for resonant single-photon single-atom interaction. Optics Letters, 2009, 34, 55.	3.3	55
36	Generation of Macroscopic Singlet States in a Cold Atomic Ensemble. Physical Review Letters, 2014, 113, 093601.	7.8	55

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37	Narrowband tunable filter based on velocity-selective optical pumping in an atomic vapor. Optics Letters, 2009, 34, 1012.	3.3	53
38	Generation of macroscopic singlet states in atomic ensembles. New Journal of Physics, 2010, 12, 053007.	2.9	53
39	Colloquium : Quantum limits to the energy resolution of magnetic field sensors. Reviews of Modern Physics, 2020, 92, .	45.6	53
40	Requirements for a loophole-free photonic Bell test using imperfect setting generators. Physical Review A, 2016, 93, .	2.5	52
41	Classical dispersion-cancellation interferometry. Optics Express, 2007, 15, 8797.	3.4	50
42	Squeezed-light spin noise spectroscopy. Physical Review A, 2016, 93, .	2.5	50
43	Real-time vector field tracking with a cold-atom magnetometer. Applied Physics Letters, 2013, 102, 173504.	3.3	48
44	Measurement-induced, spatially-extended entanglement in a hot, strongly-interacting atomic system. Nature Communications, 2020, 11, 2415.	12.8	48
45	Quantum process tomography on vibrational states of atoms in an optical lattice. Physical Review A, 2005, 72, .	2.5	46
46	Certified quantum non-demolition measurement of a macroscopic material system. Nature Photonics, 2013, 7, 517-520.	31.4	42
47	Macroscopic singlet states for gradient magnetometry. Physical Review A, 2013, 88, .	2.5	42
48	Conditions for spin squeezing in a cold87Rb ensemble. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, S548-S552.	1.4	41
49	Nonlinear metrology with a quantum interface. New Journal of Physics, 2010, 12, 093016.	2.9	39
50	Device-independent randomness expansion with entangled photons. Nature Physics, 2021, 17, 452-456.	16.7	39
51	Quantum Nondemolition Measurement Enables Macroscopic Leggett-Garg Tests. Physical Review Letters, 2015, 115, 200403.	7.8	38
52	Phase-stable source of polarization-entangled photons in a linear double-pass configuration. Optics Express, 2013, 21, 11943.	3.4	37
53	Multiparticle State Tomography: Hidden Differences. Physical Review Letters, 2007, 98, 043601.	7.8	36
54	Rubidium resonant squeezed light from a diode-pumped optical-parametric oscillator. Physical Review A, 2008, 78, .	2.5	36

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55	Shot-noise-limited magnetometer with sub-picotesla sensitivity at room temperature. Review of Scientific Instruments, 2014, 85, 113108.	1.3	36
56	Strong experimental guarantees in ultrafast quantum random number generation. Physical Review A, 2015, 91, .	2.5	36
57	High resolution magnetic vector-field imaging with cold atomic ensembles. Applied Physics Letters, 2011, 98, 074101.	3.3	34
58	Signal Tracking Beyond the Time Resolution of an Atomic Sensor by Kalman Filtering. Physical Review Letters, 2018, 120, 040503.	7.8	34
59	Experimental Low-Latency Device-Independent Quantum Randomness. Physical Review Letters, 2020, 124, 010505.	7.8	31
60	Feedback Cooling of an Atomic Spin Ensemble. Physical Review Letters, 2013, 111, 103601.	7.8	30
61	Quantum control of spin correlations in ultracold lattice gases. Physical Review A, 2013, 87, .	2.5	30
62	Hamiltonian design in atom-light interactions with rubidium ensembles: A quantum-information toolbox. Physical Review A, 2008, 77, .	2.5	29
63	Quantum atomâ€“light interfaces in the Gaussian description for spin-1 systems. New Journal of Physics, 2013, 15, 103007.	2.9	29
64	Interferometric Measurement of the Biphoton Wave Function. Physical Review Letters, 2014, 113, 183602.	7.8	28
65	Fast beam steering with full polarization control using a galvanometric optical scanner and polarization controller. Optics Express, 2012, 20, 12247.	3.4	25
66	Ultrasensitive Atomic Spin Measurements with a Nonlinear Interferometer. Physical Review X, 2014, 4, .	8.9	25
67	Dynamics of atom-mediated photon-photon scattering. Physical Review A, 2000, 62, .	2.5	24
68	Energy barrier to decoherence. Physical Review A, 2001, 63, .	2.5	24
69	Planar squeezing by quantum non-demolition measurement in cold atomic ensembles. New Journal of Physics, 2013, 15, 103031.	2.9	24
70	100 MHz Amplitude and Polarization Modulated Optical Source for Free-Space Quantum Key Distribution at 850 nm. Journal of Lightwave Technology, 2010, 28, 2572-2578.	4.6	23
71	Efficient Quantification of Non-Gaussian Spin Distributions. Physical Review Letters, 2012, 108, 183602.	7.8	22
72	Squeezed-Light Enhancement and Backaction Evasion in a High Sensitivity Optically Pumped Magnetometer. Physical Review Letters, 2021, 127, 193601.	7.8	22

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73	Unified description of inhomogeneities, dissipation and transport in quantum lightâ€“atom interfaces. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 195502.	1.5	21
74	Atomic filtering for hybrid continuous-variable/discrete-variable quantum optics. Optics Express, 2014, 22, 25307.	3.4	21
75	SU(2)-in-SU(1,1) Nested Interferometer for High Sensitivity, Loss-Tolerant Quantum Metrology. Physical Review Letters, 2022, 128, 033601.	7.8	21
76	Superluminality and amplifiers. Progress in Crystal Growth and Characterization of Materials, 1996, 33, 319-325.	4.0	20
77	Detecting hidden differences via permutation symmetries. Physical Review A, 2008, 78, .	2.5	19
78	An entangled photon source for resonant single-photonâ€“single-atom interaction. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 114002.	1.5	17
79	Absolute frequency references at 1529 and 1560â€‰â€‰nm using modulation transfer spectroscopy. Optics Letters, 2015, 40, 4731.	3.3	17
80	Sensitivity, quantum limits, and quantum enhancement of noise spectroscopies. Physical Review A, 2017, 95, .	2.5	17
81	Scaling considerations in ground-state quantum computation. Physical Review A, 2002, 65, .	2.5	16
82	Resonant interaction of a single atom with single photons from a down-conversion source. Physical Review A, 2010, 81, .	2.5	16
83	Polarization change induced by a galvanometric optical scanner. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2010, 27, 1946.	1.5	16
84	Entanglement and extreme planar spin squeezing. Physical Review A, 2018, 97, .	2.5	16
85	Indistinguishability of entangled photons generated with achromatic phase matching. Physical Review A, 2005, 71, .	2.5	15
86	NOON states from cavity-enhanced down-conversion: high quality and super-resolution. Journal of the Optical Society of America B: Optical Physics, 2010, 27, A25.	2.1	15
87	Entanglement-Enhanced Radio-Frequency Field Detection and Waveform Sensing. Physical Review Letters, 2017, 119, 043603.	7.8	15
88	Self-tuning optical resonator. Optics Letters, 2017, 42, 5298.	3.3	15
89	Multi-second magnetic coherence in a single domain spinor Boseâ€“Einstein condensate. New Journal of Physics, 2018, 20, 053008.	2.9	15
90	Interferometric photodetection in silicon photonics for phase diffusion quantum entropy sources. Optics Express, 2018, 26, 31957.	3.4	15

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91	Superluminality and parelectricity: The ammonia maser revisited. Applied Physics B: Lasers and Optics, 1995, 60, 259-265.	2.2	13
92	Criticality-enhanced quantum sensing in ferromagnetic Bose-Einstein condensates: Role of readout measurement and detection noise. Physical Review A, 2021, 103, .	2.5	13
93	Parametric down-conversion from a wave-equation approach: Geometry and absolute brightness. Physical Review A, 2009, 79, .	2.5	12
94	Superluminal and parelectric effects in rubidium vapour and ammonia gas. Quantum and Semiclassical Optics: Journal of the European Optical Society Part B, 1995, 7, 279-295.	0.9	11
95	Fast optical source for quantum key distribution based on semiconductor optical amplifiers. Optics Express, 2011, 19, 3825.	3.4	11
96	Entanglement-Enhanced Phase Estimation without Prior Phase Information. Physical Review Letters, 2017, 118, 233603.	7.8	11
97	Bose-Einstein Condensate Comagnetometer. Physical Review Letters, 2020, 124, 170401.	7.8	11
98	Maltese cross coupling to individual cold atoms in free space. Optics Express, 2019, 27, 31042.	3.4	11
99	Miniature Biplanar Coils for Alkali-Metal-Vapor Magnetometry. Physical Review Applied, 2022, 18, .	3.8	11
100	Metrology with entangled states. , 2005, , .		10
101	Optical Spin Squeezing: Bright Beams as High-Flux Entangled Photon Sources. Physical Review Letters, 2013, 111, 143601.	7.8	10
102	Long-term laser frequency stabilization using fiber interferometers. Review of Scientific Instruments, 2015, 86, 073104.	1.3	9
103	Macroscopic Quantum State Analyzed Particle by Particle. Physical Review Letters, 2015, 114, 120402.	7.8	9
104	Spatial entanglement of paired photons generated in cold atomic ensembles. Physical Review A, 2008, 78, .	2.5	8
105	Number-unconstrained quantum sensing. Quantum Science and Technology, 2017, 2, 044005.	5.8	8
106	Fully-resonant, tunable, monolithic frequency conversion as a coherent UVA source. Optics Express, 2017, 25, 1142.	3.4	8
107	Floquet theory for atomic light-shift engineering with near-resonant polychromatic fields. Optics Express, 2017, 25, 32550.	3.4	8
108	Certified quantum non-demolition measurement of material systems. New Journal of Physics, 2012, 14, 085021.	2.9	7

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109	Extreme spin squeezing for photons. New Journal of Physics, 2014, 16, 073027.	2.9	7
110	Real-time shot-noise-limited differential photodetection for atomic quantum control. Optics Letters, 2016, 41, 2946.	3.3	7
111	Scale-invariant spin dynamics and the quantum limits of field sensing. New Journal of Physics, 2020, 22, 053041.	2.9	7
112	Laser-written vapor cells for chip-scale atomic sensing and spectroscopy. Optics Express, 2022, 30, 27149.	3.4	7
113	Passive Decoy-State Quantum Key Distribution with Coherent Light. Entropy, 2015, 17, 4064-4082.	2.2	5
114	Atom-resonant squeezed light from a tunable monolithic ppRKTP parametric amplifier. Optics Letters, 2018, 43, 643.	3.3	5
115	Autoheterodyne Characterization of Narrow-Band Photon Pairs. Physical Review Letters, 2021, 127, 043601.	7.8	5
116	Narrowband photon pairs with independent frequency tuning for quantum light-matter interactions. Optics Express, 2019, 27, 38463.	3.4	5
117	Single-domain Bose condensate magnetometer achieves energy resolution per bandwidth below â„. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	5
118	Improving Short-Term Stability in Optical Lattice Clocks by Quantum Nondemolition Measurement. Physical Review Letters, 2022, 128, 153201.	7.8	5
119	Near-resonant optical forces beyond the two-level approximation for a continuous source of spin-polarized cold atoms. Physical Review A, 2013, 87, .	2.5	4
120	Theory of high gain cavity-enhanced spontaneous parametric down-conversion. Physical Review A, 2014, 90, .	2.5	4
121	Optimal signal recovery for pulsed balanced detection. Physical Review A, 2014, 90, .	2.5	3
122	Spontaneous $mathcal{PT}$ symmetry breaking of a ferromagnetic superfluid in a gradient field. Europhysics Letters, 2015, 111, 66001.	2.0	3
123	Interferometric measurement of interhyperfine scattering lengths in Rb87. Physical Review A, 2019, 100, .	2.5	3
124	Atomic Quantum Metrology with Polarization-Entangled States of Light. , 2012, , .		2
125	Experimental measurement-dependent local Bell test with human free will. Physical Review A, 2019, 99, .	2.5	2
126	Manipulating and measuring single atoms in the Maltese cross geometry. Open Research Europe, 0, 1, 102.	2.0	2

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127	Quantum process tomography and the search for decoherence-free subspaces. , 2004, 5436, 223.		1
128	Limitations of quantum process tomography. , 2005, 5631, 60.		1
129	Rubidium resonant squeezed light from a diode-pumped optical parametric oscillator. , 2009, , .		1
130	Entanglement-enhanced probing of a delicate material system. , 2013, , .		1
131	Unconventional quantum correlations of light emitted by a single atom in free space. Physical Review A, 2021, 104, .	2.5	1
132	A strong loophole-free test of local realism. , 2016, , .		1
133	Cavity-enhanced atomic polarization rotation measurements. Optics Express, 0, , .	3.4	1
134	Experimental generation of entangled states by post-selected linear-optics operations. , 2004, , IMG5.		0
135	Conditions for a QND measurement of spin in cold /sup 87/Rb. , 0, , .		0
136	Narrowband ⁸⁷Rb Resonant Downconversion Source for Quantum Memories. , 2007, , .		0
137	Cold ⁸⁷Rb ensembles: non-Gaussian state detection and spin tomography. , 2007, , .		0
138	Spin squeezing experiments in a cold ensemble of ⁸⁷Rb. , 2007, , .		0
139	Inhomogeneities in atom-light interfaces and spin squeezing dynamics. , 2007, , .		0
140	A pair photon source for heralded single-photon - single-atom interaction. , 2007, , .		0
141	Better-than-Heisenberg scaling of sensitivity with light and cold atomic ensembles. , 2009, , .		0
142	Ultra-sensitive Faraday rotation measurements from an atom-light quantum interface. , 2009, , .		0
143	A single ion interacting with single spontaneous parametric down-conversion photons. , 2009, , .		0
144	Narrow-band filter for quantum light. , 2009, , .		0

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145	Ultra-bright narrow-band down-conversion source for atom-photon interaction. , 2009, , .		0
146	100 MHz Amplitude and Polarization Modulated Optical Source for Free-Space Quantum Communications at 850 nm. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2010, , 297-304.	0.3	0
147	Collaboration and precision in quantum measurement. Physics Today, 2011, 64, 72-73.	0.3	0
148	Experimental light-squeezing-enhanced magnetometry. , 2011, , .		0
149	Interaction-based quantum metrology giving a scaling beyond the Heisenberg limit. , 2011, , .		0
150	Improvement of an atomic measurement by multi-photon interference. , 2011, , .		0
151	Many-particle pairwise entanglement induced by temporal anti-correlation of a Stokes parameter. , 2011, , .		0
152	Generation of a macroscopic singlet state in an atomic ensemble. , 2011, , .		0
153	Active and passive optical sources for QKD. , 2011, , .		0
154	Fast and non-destructive vector field magnetometry with cold atomic ensembles. , 2013, , .		0
155	A continuous source of cold spin-polarized cold atoms. , 2013, , .		0
156	Simultaneous observation of super-Heisenberg scaling and spin squeezing in a nonlinear measurement of atomic spins. , 2013, , .		0
157	Ultra-bright source of polarization-entangled photons in a linear double-pass configuration. , 2013, , .		0
158	Spin cooling via incoherent feedback in an ensemble of cold⁸⁷Rb atoms. , 2013, , .		0
159	Quantum control of spin-correlations in ultracold lattice gases. , 2013, , .		0
160	Quantum metrology with cold atomic ensembles. EPJ Web of Conferences, 2013, 57, 03004.	0.3	0
161	Manipulating and measuring single atoms in the Maltese cross geometry. Open Research Europe, 0, 1, 102.	2.0	0
162	Quantum Light - Matter Interactions with Cold Ensembles. , 2007, , .		0

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163	Cold atomic ensembles for quantum interfaces: new interactions.. , 2007, , .		0
164	Interaction Free Spectroscopy with Single Photons. , 2007, , .		0
165	Quantum-Enhanced Measurements of Atomic Spin. , 2009, , .		0
166	Ultra-Bright Narrow-Band Down-Conversion Source for Atom-Photon Interaction. , 2009, , .		0
167	Generation of a macroscopic singlet state in an atomic ensemble. , 2011, , .		0
168	Quantum-Light-Enhanced Optical Magnetometry. , 2011, , .		0
169	Compact optical sources for quantum communications. , 2011, , .		0
170	Generation of a macroscopic singlet state in an atomic ensemble. , 2012, , .		0
171	Spin Squeezing of Large-Spin Ensembles via Quantum Non-demolition Measurement. , 2012, , .		0
172	High-performance narrowband filter for atom-resonant quantum light generation. , 2012, , .		0
173	Generation of a macroscopic singlet state in an atomic ensemble. , 2012, , .		0
174	Multipartite photonic entanglement generated from polarization squeezing at 795 nm. , 2012, , .		0
175	Quantum control of spin-correlations in ultracold lattice gases. , 2013, , .		0
176	Generation of planar quantum squeezing in an atomic ensemble. , 2013, , .		0
177	Simultaneous observation of super-Heisenberg scaling and spin squeezing in a nonlinear measurement of atomic spins. , 2013, , .		0
178	Entanglement-enhanced probing of a delicate material system. , 2013, , .		0
179	Ultra-sensitive atomic spin measurements with a nonlinear interferometer. , 2014, , .		0
180	Generation of planar squeezed states in atomic ensembles. , 2014, , .		0

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181	Ultrafast Quantum Random Number Generation Using Off-the-shelf Components. , 2014, , .		0
182	Spin cooling via incoherent feedback in an ensemble of cold 87Rb atoms. , 2014, , .		0
183	Certified quantum non-demolition measurement of atomic spins. , 2014, , .		0
184	High-purity atom resonant pairs of indistinguishable photons via filtered down-conversion. , 2014, , .		0
185	Generation, Characterization and Use of Atom-Resonant Indistinguishable Photon Pairs. Nano-optics and Nanophotonics, 2015, , 183-213.	0.2	0
186	From the first loophole-free Bell test to a Quantum Internet. , 2016, , .		0
187	A significant-loophole-free test of Bell's theorem with entangled photons. , 2017, , .		0
188	Integrated Quantum Entropy Sources. , 2018, , .		0
189	Loophole-Free Test of Einstein-Podolsky-Rosen Steering with One Bit of Faster-than-Light Communication. , 2020, , .		0