Steven L Rolston

List of Publications by Year
in descending order

Version: 2024-02-01

177 papers	13,396 citations	25014 57 h-index	21521 114 g-index
178 all docs	178 docs citations	178 times ranked	5986 citing authors

#	Article	IF	Citations
1	Fast Quantum Gates for Neutral Atoms. Physical Review Letters, 2000, 85, 2208-2211.	2.9	1,197
2	Generating Solitons by Phase Engineering of a Bose-Einstein Condensate. Science, 2000, 287, 97-101.	6.0	1,129
3	A Well-Collimated Quasi-Continuous Atom Laser. Science, 1999, 283, 1706-1709.	6.0	408
4	Four-wave mixing with matter waves. Nature, 1999, 398, 218-220.	13.7	406
5	Creation of an Ultracold Neutral Plasma. Physical Review Letters, 1999, 83, 4776-4779.	2.9	402
6	Coherent Splitting of Bose-Einstein Condensed Atoms with Optically Induced Bragg Diffraction. Physical Review Letters, 1999, 82, 871-875.	2.9	397
7	Optical molasses. Journal of the Optical Society of America B: Optical Physics, 1989, 6, 2084.	0.9	361
8	Observation of Reduced Three-Body Recombination in a Correlated 1D Degenerate Bose Gas. Physical Review Letters, 2004, 92, 190401.	2.9	349
9	Dynamical tunnelling of ultracold atoms. Nature, 2001, 412, 52-55.	13.7	316
10	Antihydrogen production using trapped plasmas. Physics Letters, Section A: General, Atomic and Solid State Physics, 1988, 129, 38-42.	0.9	295
11	Observation of quantized motion of Rb atoms in an optical field. Physical Review Letters, 1992, 69, 49-52.	2.9	294
12	A Bose-Einstein condensate in an optical lattice. Journal of Physics B: Atomic, Molecular and Optical Physics, 2002, 35, 3095-3110.	0.6	274
13	Open-endcap Penning traps for high precision experiments. International Journal of Mass Spectrometry and Ion Processes, 1989, 88, 319-332.	1.9	251
14	Adiabatic Cooling of Cesium to 700 nK in an Optical Lattice. Physical Review Letters, 1995, 74, 1542-1545.	2.9	224
15	Formation of Rydberg Atoms in an Expanding Ultracold Neutral Plasma. Physical Review Letters, 2001, 86, 3759-3762.	2.9	220
16	Microlithography by using neutral metastable atoms and self-assembled monolayers. Science, 1995, 269, 1255-1257.	6.0	212
17	Spectroscopy ofNa2by photoassociation of laser-cooled Na. Physical Review Letters, 1993, 71, 2200-2203.	2.9	211
18	Temporal, Matter-Wave-Dispersion Talbot Effect. Physical Review Letters, 1999, 83, 5407-5411.	2.9	195

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19	Strongly Inhibited Transport of a Degenerate 1D Bose Gas in a Lattice. Physical Review Letters, 2005, 94, 120403.	2.9	194
20	Patterned loading of a Bose-Einstein condensate into an optical lattice. Physical Review A, 2003, 67, .	1.0	193
21	First Capture of Antiprotons in a Penning Trap: A Kiloelectronvolt Source. Physical Review Letters, 1986, 57, 2504-2507.	2.9	186
22	Plasma Oscillations and Expansion of an Ultracold Neutral Plasma. Physical Review Letters, 2000, 85, 318-321.	2.9	186
23	Bragg Scattering from Atoms in Optical Lattices. Physical Review Letters, 1995, 75, 2823-2826.	2.9	183
24	Super-radiance reveals infinite-range dipole interactions through a nanofiber. Nature Communications, 2017, 8, 1857.	5.8	174
25	Measurement of the Coherence of a Bose-Einstein Condensate. Physical Review Letters, 1999, 83, 3112-3115.	2.9	169
26	Photonic band gaps in optical lattices. Physical Review A, 1995, 52, 1394-1410.	1.0	168
27	Diffraction of a Released Bose-Einstein Condensate by a Pulsed Standing Light Wave. Physical Review Letters, 1999, 83, 284-287.	2.9	154
28	Momentum transfer in laser-cooled cesium by adiabatic passage in a light field. Physical Review Letters, 1994, 72, 997-1000.	2.9	152
29	Coherent atomic waveguides from hollow optical fibers: Quantized atomic motion. Physical Review A, 1994, 50, 2680-2690.	1.0	151
30	Photoassociation of Sodium in a Bose-Einstein Condensate. Physical Review Letters, 2002, 88, 120403.	2.9	147
31	Localization of atoms in a three-dimensional standing wave. Physical Review Letters, 1990, 65, 33-36.	2.9	139
32	Interactions between Rydberg-dressed atoms. Physical Review A, 2010, 82, .	1.0	138
33	Observation of Collective Modes of Ultracold Plasmas. Physical Review Letters, 2006, 96, 105003.	2.9	122
34	Measurement of the He Ground State Lamb Shift via the Two-Photon1S1âˆ'2S1Transition. Physical Review Letters, 1998, 80, 3475-3478.	2.9	104
35	Photoassociative spectroscopy of 1g, 0+u, and 0âˆ'g states of Na2. Journal of Chemical Physics, 1994, 101, 2638-2641.	1.2	101
36	Nonlinear and quantum atom optics. Nature, 2002, 416, 219-224.	13.7	98

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37	Optimal and secure measurement protocols for quantum sensor networks. Physical Review A, 2018, 97, .	1.0	95
38	Ultrahigh transmission optical nanofibers. AIP Advances, 2014, 4, .	0.6	94
39	Imaging the Phase of an Evolving Bose-Einstein Condensate Wave Function. Physical Review Letters, 2000, 85, 2040-2043.	2.9	91
40	Atomic interface between microwave and optical photons. Physical Review A, 2012, 85, .	1.0	90
41	Anomalous Broadening in Driven Dissipative Rydberg Systems. Physical Review Letters, 2016, 116, 113001.	2.9	84
42	Optical Control of Ultracold Collisions in Metastable Xenon. Physical Review Letters, 1995, 74, 506-509.	2.9	78
43	Collapse and Revivals of Wave Packets in Optical Lattices. Physical Review Letters, 1998, 81, 3615-3618.	2.9	77
44	Cooling and Localization Dynamics in Optical Lattices. Physical Review Letters, 1997, 78, 630-633.	2.9	74
45	Non-Markovian Collective Emission from Macroscopically Separated Emitters. Physical Review Letters, 2020, 124, 043603.	2.9	72
46	Optical Nanofibers. Advances in Atomic, Molecular and Optical Physics, 2017, 66, 439-505.	2.3	69
47	Precision Measurement of Transition Matrix Elements via Light Shift Cancellation. Physical Review Letters, 2012, 109, 243003.	2.9	68
48	Demonstration of neutral atom trapping with microwaves. Physical Review Letters, 1994, 72, 3162-3165.	2.9	65
49	Manipulation of single neutral atoms in optical lattices. Physical Review A, 2006, 74, .	1.0	65
50	Using Three-Body Recombination to Extract Electron Temperatures of Ultracold Plasmas. Physical Review Letters, 2007, 99, 145001.	2.9	65
51	Electron Temperature of Ultracold Plasmas. Physical Review Letters, 2004, 92, 253003.	2.9	64
52	Laser modification of ultracold collisions: Experiment. Physical Review Letters, 1991, 67, 2139-2142.	2.9	63
53	Magneto-optical trapping of metastable xenon: Isotope-shift measurements. Physical Review A, 1993, 48, R879-R882.	1.0	61
54	Four-wave mixing in the diamond configuration in an atomic vapor. Physical Review A, 2009, 79, .	1.0	61

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55	Intermodal energy transfer in a tapered optical fiber: optimizing transmission. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2013, 30, 2361.	0.8	60
56	Dark State Optical Lattice with a Subwavelength Spatial Structure. Physical Review Letters, 2018, 120, 083601.	2.9	60
57	Transport of atoms in a quantum conveyor belt. Physical Review A, 2005, 72, .	1.0	58
58	Ultracold neutral plasmas. Reports on Progress in Physics, 2017, 80, 017001.	8.1	57
59	Correlated photon pairs generated from a warm atomic ensemble. Physical Review A, 2010, 82, .	1.0	55
60	Compression and Parametric Driving of Atoms in Optical Lattices. Physical Review Letters, 1997, 78, 2928-2931.	2.9	51
61	A single hollow-beam optical trap for cold atoms. Journal of Optics B: Quantum and Semiclassical Optics, 2001, 3, 353-357.	1.4	51
62	Quantum information with neutral atoms as qubits. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 1417-1427.	1.6	51
63	Nondegenerate four-wave mixing in rubidium vapor: The diamond configuration. Physical Review A, 2008, 78, .	1.0	51
64	Cooling antiprotons in an ion trap. Hyperfine Interactions, 1989, 44, 233-245.	0.2	50
65	Self-assembled monolayers exposed by metastable argon and metastable helium for neutral atom lithography and atomic beam imaging. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1997, 15, 1805.	1.6	50
66	Laser spectroscopy of light Yb isotopes on-line in a cooled gas cell. Physical Review Letters, 1989, 63, 1463-1466.	2.9	49
67	Precision measurement of the metastable 6s[3/2]2lifetime in xenon. Physical Review Letters, 1994, 72, 2843-2846.	2.9	49
68	Ïƒ_+â€“Ïƒ_â^' Optical molasses in a longitudinal magnetic field. Journal of the Optical Society of America B: Optical Physics, 1992, 9, 1997.	0.9	47
69	Photon statistics and polarization correlations at telecommunications wavelengths from a warm atomic ensemble. Optics Express, 2011, 19, 14632.	1.7	47
70	Degenerate Bose-Fermi mixtures of rubidium and ytterbium. Physical Review A, 2015, 92, .	1.0	44
71	Hyperfine effects on associative ionization of ultracold sodium. Physical Review Letters, 1993, 70, 2074-2077.	2.9	41
72	Collisional deexcitation in a quasi-two-dimensional degenerate bosonic gas. Physical Review A, 2006, 73, .	1.0	40

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73	A low-loss photonic silica nanofiber for higher-order modes. Optics Express, 2013, 21, 18325.	1.7	40
74	Ultracold Plasma Expansion in a Magnetic Field. Physical Review Letters, 2008, 100, 235002.	2.9	39
75	Sub-Doppler cooling of neutral atoms in a grating magneto-optical trap. Journal of the Optical Society of America B: Optical Physics, 2013, 30, 2869.	0.9	38
76	Barkas effect with use of antiprotons and protons. Physical Review A, 1989, 40, 481-484.	1.0	36
77	Spin polarization and quantum-statistical effects in ultracold ionizing collisions. Physical Review A, 1999, 59, 1926-1935.	1.0	36
78	Temperature and localization of atoms in three-dimensional optical lattices. Physical Review A, 1997, 55, R3987-R3990.	1.0	35
79	Ultracold neutral plasmas. Physics Today, 2010, 63, 46-51.	0.3	35
80	Observation of an Ultracold Plasma Instability. Physical Review Letters, 2008, 101, 195002.	2.9	33
81	On-demand indistinguishable single photons from an efficient and pure source based on a Rydberg ensemble. Optica, 2020, 7, 813.	4.8	33
82	Rayleigh scattering in an optical nanofiber as a probe of higher-order mode propagation. Optica, 2015, 2, 416.	4.8	32
83	Ultracold neutral plasmas: recent experiments and new prospects. Journal of Physics A, 2003, 36, 6077-6085.	1.6	31
84	Nanoscale Atomic Density Microscopy. Physical Review X, 2019, 9, .	2.8	31
85	Adiabaticity and Localization in One-Dimensional Incommensurate Lattices. Physical Review Letters, 2008, 101, 260402.	2.9	30
86	Photon-correlation measurements of atomic-cloud temperature using an optical nanofiber. Physical Review A, 2015, 92, .	1.0	30
87	Laser-cooled neutral atom frequency standards. Proceedings of the IEEE, 1991, 79, 943-951.	16.4	29
88	Ultracold collisions and optical shielding in metastable xenon. Physical Review A, 1996, 53, 1678-1689.	1.0	29
89	Dissipation-induced dipole blockade and antiblockade in driven Rydberg systems. Physical Review A, 2018, 97, .	1.0	29
90	Properties of a Raman atom-laser output coupler. Journal of Physics B: Atomic, Molecular and Optical Physics, 1999, 32, 2935-2950.	0.6	28

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91	Electronic Detection of Collective Modes of an Ultracold Plasma. Physical Review Letters, 2012, 108, 065003.	2.9	28
92	Coherence properties of an atom laser. Journal of Physics B: Atomic, Molecular and Optical Physics, 2000, 33, 47-54.	0.6	27
93	Disorder-driven loss of phase coherence in a quasi-2D cold atom system. New Journal of Physics, 2012, 14, 073024.	1.2	27
94	Spontaneous avalanche dephasing in large Rydberg ensembles. Physical Review A, 2017, 96, .	1.0	26
95	Inhomogeneous broadening of optical transitions of 87Rb atoms in an optical nanofiber trap. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 165004.	0.6	24
96	Lifetime andg-factor measurements of yrast states inNd134andNd136. Physical Review C, 1987, 36, 974-985.	1.1	23
97	Time-Resolved Studies of Ultracold Ionizing Collisions. Physical Review Letters, 1998, 80, 5093-5096.	2.9	23
98	Possible antihydrogen production using trapped plasmas. Hyperfine Interactions, 1989, 44, 287-293.	0.2	22
99	Two-photon dichroic atomic vapor laser lock using electromagnetically induced transparency and absorption. Journal of the Optical Society of America B: Optical Physics, 2009, 26, 1315.	0.9	22
100	Lifetime of the metastable 6sâ€² [1/2]_0 clock state in xenon. Optics Letters, 1995, 20, 1192.	1.7	21
101	Magnetic inhibition of polarization-gradient laser cooling inÏƒ+-Ïƒâˆ’optical molasses. Physical Review A, 1996, 54, 2275-2279.	1.0	20
102	Modal interference in optical nanofibers for sub-Angstrom radius sensitivity. Optica, 2017, 4, 157.	4.8	20
103	Quantum Interference between Photons from an Atomic Ensemble and a Remote Atomic Ion. Physical Review Letters, 2019, 123, 213601.	2.9	19
104	Integrated optical dipole trap for cold neutral atoms with an optical waveguide coupler. New Journal of Physics, 2013, 15, 043010.	1.2	18
105	A nanowaveguide platform for collective atom-light interaction. Applied Physics Letters, 2015, 107, .	1.5	18
106	Microcontroller based scanning transfer cavity lock for long-term laser frequency stabilization. Review of Scientific Instruments, 2019, 90, 043115.	0.6	18
107	Deeply subrecoil two-dimensional Raman cooling. Physical Review A, 2004, 70, .	1.0	17
108	Realization of a stroboscopic optical lattice for cold atoms with subwavelength spacing. Physical Review A, 2020, 101, .	1.0	17

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109	Coherent transfer of photon momentum by adiabatic following in a dark state. Journal of the European Optical Society Part B: Quantum Optics, 1994, 6, 387-389.	1.2	15
110	Suppression and Enhancement of Collisions in Optical Lattices. Physical Review Letters, 1998, 80, 480-483.	2.9	15
111	Thin-film superconducting resonator tunable to the ground-state hyperfine splitting of 87Rb. AIP Advances, 2011, 1, .	0.6	15
112	Dynamics of trapped atoms around an optical nanofiber probed through polarimetry. Optics Letters, 2017, 42, 2283.	1.7	15
113	Trapping atoms with optical potentials. , 1992, , .		14
114	Electron evaporation from an ultracold plasma in a uniform electric field. Physics of Plasmas, 2010, 17, 082101.	0.7	12
115	A resonance cell for on-line optical spectroscopy of accelerator produced radioactive atoms. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1992, 311, 224-239.	0.7	11
116	Laser manipulation and cooling of (anti)hydrogen. Hyperfine Interactions, 1993, 76, 265-272.	0.2	11
117	Precision Spectroscopy in He as a Test of QED. Physica Scripta, 1999, T83, 76.	1.2	10
118	Alignment-dependent decay rate of an atomic dipole near an optical nanofiber. Physical Review A, 2019, 99, .	1.0	10
119	Nondegenerate four-wave mixing in rubidium vapor: Transient regime. Physical Review A, 2010, 82, .	1.0	9
120	Observation of Vacuum-Induced Collective Quantum Beats. Physical Review Letters, 2021, 127, 073604.	2.9	9
121	First Capture of Antiprotons in an Ion Trap: Progress Toward a Precision Mass Measurement and Antihydrogen. Physica Scripta, 1988, T22, 36-40.	1.2	8
122	A superconducting solenoid system which cancels fluctuations in the ambient magnetic field. Journal of Magnetic Resonance, 1991, 91, 564-572.	0.5	8
123	g factor above the first backbend in 168W. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1986, 178, 145-149.	1.5	7
124	Observation of proton alignment at the backbend in 136Nd. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1987, 189, 277-281.	1.5	7
125	Bragg Scattering from an Optical Lattice. Optics and Photonics News, 1996, 7, 25.	0.4	7
126	Magnetization and spin-flip dynamics of atoms in optical lattices. Physical Review A, 1998, 58, R2660-R2663.	1.0	7

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127	Spectral asymmetry of atoms in the van der Waals potential of an optical nanofiber. Physical Review A, 2018, 97, .	1.0	7
128	Floquet engineering of optical lattices with spatial features and periodicity below the diffraction limit. New Journal of Physics, 2019, 21, 113058.	1.2	7
129	g-Factor measurements of fission isomers. Hyperfine Interactions, 1983, 15, 43-54.	0.2	6
130	Coherent optical nanotweezers for ultracold atoms. Physical Review A, 2020, 102, .	1.0	6
131	Determination of the xenon 6s[3/2]_2â€“6sâ€²[1/2]_0 clock frequency by interferometric wavelength measurements. Optics Letters, 1995, 20, 1421.	1.7	5
132	A g-factor measurement of the 239Am fission isomer. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1985, 163, 327-330.	1.5	4
133	BOSONS IN OPTICAL LATTICES. International Journal of Modern Physics B, 2006, 20, 2755-2759.	1.0	4
134	Tunable Three-Body Loss in a Nonlinear Rydberg Medium. Physical Review Letters, 2021, 126, 173401.	2.9	4
135	Optical molasses: cold atoms for precision measurements. IEEE Transactions on Instrumentation and Measurement, 1991, 40, 78-80.	2.4	3
136	Atom optics with Bose-Einstein condensates. , 0, , .		3
137	Using Charged Particle Imaging to Study Ultracold Plasma Expansion. , 2009, , .		3
138	A hybrid quantum system of atoms trapped on ultrathin optical fibers coupled to superconductors. , 2013, , .		3
139	Movable Thin-Film Superconducting Resonator Coupled to a Tapered Optical Microfiber at 15 mK. IEEE Transactions on Applied Superconductivity, 2015, 25, 1-5.	1.1	3
140	Lifetime andg-factor measurements in136Nd. Hyperfine Interactions, 1987, 34, 65-68.	0.2	2
141	Optical Molasses: The Coldest Atoms Ever. Physica Scripta, 1991, T34, 20-22.	1.2	2
142	Demonstration of a microwave trap for cesium atoms. Physica B: Condensed Matter, 1994, 194-196, 893-894.	1.3	2
143	Getting the measure of entanglement. Nature, 2015, 528, 48-49.	13.7	2
144	Comment on â€˜â€˜Localization of atoms in a three-dimensional standing waveâ€™â€™. Physical Review Letters, 1991, 66, 2412-2412.	2.9	1

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145	Photoassociative ionization spectroscopy in ultracold sodium. AIP Conference Proceedings, 1995, , .	0.3	1
146	Decay of Atomic Wave-Packet Motion in Optical Lattices. Fortschritte Der Physik, 1998, 46, 791-799.	1.5	1
147	Progress towards a laser-cooled cesium atomic fountain frequency standard at NIST, Gaithersburg. , 0, , .		1
148	A laser-cooled Atomic Clock in Space. AIP Conference Proceedings, 2000, , .	0.3	1
149	Higher order mode propagation in ultrathin optical fibers for atom traps. , 2013, , .		1
150	Ultracold neutral plasmas. , 2003, , .		1
151	Atoms Laser-Cooled Below the Doppler-Cooling Limit. , 1989, , 264-269.		1
152	Resonant enhancement of three-body loss between strongly interacting photons. Physical Review Research, 2022, 4, .	1.3	1
153	Measurements of fluorescence from cold atoms: Localization in three-dimensional standing waves. AIP Conference Proceedings, 1991, , .	0.3	0
154	Westbrooket al. reply. Physical Review Letters, 1991, 66, 2413-2413.	2.9	0
155	Observation of quantized motion of atoms in optical molasses. AIP Conference Proceedings, 1993, , .	0.3	0
156	Demonstration of the microwave trap for cesium atoms. AIP Conference Proceedings, 1993, , .	0.3	0
157	Optical lattices for atomic fountain frequency standards. , 0, , .		0
158	The microwave trap and prospects for Bose-Einstein condensation. Physica B: Condensed Matter, 1994, 194-196, 907-908.	1.3	0
159	Doppler-free resonance ionization spectroscopy of the He 1s[sup 2]â€‰[sup 1]Sâ€™1s2sâ€‰[sup 1]S transition at 120.3 nm. , 1997, , .		0
160	An ultracold neutral plasma. , 1999, , .		0
161	Magnetic trapping, evaporative cooling, and Bose Einstein Condensation. , 1999, , .		0
162	Non-linear atom optics: solitons and four-wave-mixing in a Bose-Einstein condensate. , 2000, , WC2.		0

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163	Non-linear atom optics: solitons and four-wave-mixing in a Bose-Einstein condensate. , 0, , .		0
164	Study of a 1D interacting quantum Bose gas. European Physical Journal Special Topics, 2004, 116, 227-232.	0.2	0
165	Four-wave mixing in a diamond configuration: Experiments with rubidium vapor. , 2007, , .		0
166	Ultracold neutral plasmas. , 2014, , .		0
167	Griffiths physics in an ultracold Bose gas. Physical Review A, 2019, 99, .	1.0	0
168	EXPERIMENTAL STUDY OF A BOSE GAS IN ONE DIMENSION. , 2004, , .		0
169	BOSONS IN OPTICAL LATTICES. , 2006, , .		0
170	Cold Atoms Coupled to a Superconducting Flux Qubit. , 2011, , .		0
171	Using Atomic Physics to Understand Condensed Matter. , 2012, , .		0
172	First Antiprotons in an Ion Trap. Springer Series in Optical Sciences, 1987, , 22-25.	0.5	0
173	Heterodyne Spectrum of the Fluorescence from Optical Molasses. , 1990, , 681-684.		0
174	10.1063/1.4879799.1. , 2014, , .		0
175	Torsional modes of a nanofiber: polarimetric excitation and read out.. , 2016, , .		0
176	Subradiance in a nanofiber mode by an ensemble of a few cold Rb atoms. , 2016, , .		0
177	Radiative lifetime changes in the vicinity of a nanofiber: dielectric, and alignment effects. , 2016, , .		0