

Carl J Williams

List of Publications by Year in descending order

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97
papers

4,628
citations

93792

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2958
citing authors

#	ARTICLE	IF	CITATIONS
1	A "real-time" guitar recording using Rydberg atoms and electromagnetically induced transparency: Quantum physics meets music. <i>AIP Advances</i> , 2019, 9, .	0.6	38
2	Measurement of the Planck constant at the National Institute of Standards and Technology from 2015 to 2017. <i>Metrologia</i> , 2017, 54, 633-641.	0.6	65
3	Bridging classical and quantum mechanics. <i>Metrologia</i> , 2016, 53, A83-A85.	0.6	18
4	Invited Article: A precise instrument to determine the Planck constant, and the future kilogram. <i>Review of Scientific Instruments</i> , 2016, 87, 061301.	0.6	61
5	A new polarized neutron interferometry facility at the NCNR. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2016, 813, 111-122.	0.7	14
6	Chern numbers hiding in time-of-flight images. <i>Physical Review A</i> , 2011, 84, .	1.0	61
7	Detecting paired and counterflow superfluidity via dipole oscillations. <i>Physical Review A</i> , 2011, 84, .	1.0	15
8	Momentum distribution and ordering in mixtures of ultracold light- and heavy-fermion atoms. <i>Physical Review A</i> , 2011, 83, .	1.0	5
9	Efficiency for performing molecules from mixtures of light Fermi and heavy Bose atoms in optical lattices: The strong-coupling-expansion method. <i>Physical Review A</i> , 2011, 83, .	1.0	4
10	Improving the efficiency of ultracold dipolar molecule formation by first loading onto an optical lattice. <i>Physical Review A</i> , 2010, 81, .	1.0	24
11	Superfluid and Fermi-liquid phases of Bose-Fermi mixtures in optical lattices. <i>Physical Review A</i> , 2009, 79, .	1.0	0
12	Counterflow and paired superfluidity in one-dimensional Bose mixtures in optical lattices. <i>Physical Review A</i> , 2009, 80, .	1.0	61
13	Effective three-body interactions of neutral bosons in optical lattices. <i>New Journal of Physics</i> , 2009, 11, 093022.	1.2	96
14	Theoretical analysis of perfect quantum state transfer with superconducting qubits. <i>Physical Review B</i> , 2008, 78, .	1.1	36
15	Superfluid and Mott-insulating shells of bosons in harmonically confined optical lattices. <i>Physical Review A</i> , 2008, 77, .	1.0	18
16	Trap-imbalanced fermion mixtures. <i>Physical Review A</i> , 2008, 77, .	1.0	11
17	Tunneling phase gate for neutral atoms in a double-well lattice. <i>Physical Review A</i> , 2008, 77, .	1.0	18
18	Pattern Formation in Mixtures of Ultracold Atoms in Optical Lattices. <i>Physical Review Letters</i> , 2008, 101, 060404.	2.9	26

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19	Population-imbalanced fermions in harmonically trapped optical lattices. Physical Review A, 2008, 78, .	1.0	18
20	Trapped p-wave superfluids: A local-density approach. Physical Review A, 2008, 77, .	1.0	9
21	Cancellation of the Collisional Frequency Shift in Caesium Fountain Clocks. Physical Review Letters, 2007, 98, 153002.	2.9	63
22	Manipulation of the collisional frequency shift in caesium fountain clocks. Proceedings of SPIE, 2007, , .	0.8	0
23	Free-space quantum key distribution at GHz repetition rates. , 2007, , .		0
24	High-repetition rate quantum key distribution. , 2007, , .		7
25	Effects of finite temperature on the Mott-insulator state. Physical Review A, 2006, 73, .	1.0	22
26	Experimental study of high speed polarization-coding quantum key distribution with sifted-key rates over Mbit/s. Optics Express, 2006, 14, 2062.	1.7	33
27	Demonstration of an active quantum key distribution network. , 2006, , .		10
28	High speed quantum key distribution system supports one-time pad encryption of real-time video. , 2006, , .		25
29	Has quantum cryptography been proven secure?. , 2006, 6244, 119.		5
30	Quantum key distribution system operating at sifted-key rate over 4 Mbit/s. , 2006, , .		6
31	Free-space quantum cryptography in the H-alpha Fraunhofer window. , 2006, , .		17
32	High-speed photon counting techniques for broadband quantum key distribution. , 2006, 6372, 281.		1
33	Extended fermionization of 1D bosons in optical lattices. New Journal of Physics, 2006, 8, 161-161.	1.2	19
34	Mean-field treatment of the damping of the oscillations of a one-dimensional Bose gas in an optical lattice. Physical Review A, 2006, 73, .	1.0	16
35	Scalable register initialization for quantum computing in an optical lattice. Journal of Physics B: Atomic, Molecular and Optical Physics, 2005, 38, 1687-1694.	0.6	18
36	Feshbach resonances in fermionic Li6. Physical Review A, 2005, 71, .	1.0	185

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37	Scattering-length determination from trapped pairs of atoms. <i>Physical Review A</i> , 2005, 72, .	1.0	2
38	Ultracold atoms confined in an optical lattice plus parabolic potential: A closed-form approach. <i>Physical Review A</i> , 2005, 72, .	1.0	87
39	Multichannel quantum-defect theory for slow atomic collisions. <i>Physical Review A</i> , 2005, 72, .	1.0	75
40	Loading Bose-Einstein-condensed atoms into the ground state of an optical lattice. <i>Physical Review A</i> , 2005, 72, .	1.0	6
41	Measurement and modeling of hyperfine- and rotation-induced state mixing in large weakly bound sodium dimers. <i>Physical Review A</i> , 2005, 71, .	1.0	31
42	Precise Determination of Li_6 Cold Collision Parameters by Radio-Frequency Spectroscopy on Weakly Bound Molecules. <i>Physical Review Letters</i> , 2005, 94, 103201.	2.9	234
43	Bragg spectroscopy of ultracold atoms loaded in an optical lattice. <i>Physical Review A</i> , 2005, 72, .	1.0	71
44	Quantum computations with atoms in optical lattices: Marker qubits and molecular interactions. <i>Physical Review A</i> , 2004, 70, .	1.0	139
45	Near-threshold photoassociation of $87Rb_2$. <i>Physical Review A</i> , 2004, 69, .	1.0	31
46	Four-wave mixing in Bose-Einstein condensate systems with multiple spin states. <i>Physical Review A</i> , 2004, 70, .	1.0	6
47	Precision Feshbach spectroscopy of ultracold Cs_2 . <i>Physical Review A</i> , 2004, 70, .	1.0	135
48	Scalable quantum computation in systems with Bose-Hubbard dynamics. <i>Journal of Modern Optics</i> , 2004, 51, 2395-2404.	0.6	8
49	Quantum key distribution with 1.25 Gbps clock synchronization. <i>Optics Express</i> , 2004, 12, 2011.	1.7	113
50	Relativistic many-body calculations of electric-dipole matrix elements, lifetimes, and polarizabilities in rubidium. <i>Physical Review A</i> , 2004, 69, .	1.0	116
51	Expeditious reconciliation for practical quantum key distribution. , 2004, 5436, 28.		24
52	Bogoliubov approach to superfluidity of atoms in an optical lattice. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2003, 36, 825-841.	0.6	88
53	Effects of inhomogeneity on the spectrum of the Mott-insulator state. <i>Physical Review A</i> , 2003, 68, .	1.0	16
54	Quantum-computer architecture using nonlocal interactions. <i>Physical Review A</i> , 2003, 67, .	1.0	37

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55	Purely-long-range bound states of He(2s3S)+He(2p3P). Physical Review A, 2003, 68, .	1.0	19
56	Decay and revival of phase coherence of a Bose-Einstein condensate in a one-dimensional lattice. Physical Review A, 2003, 67, .	1.0	22
57	Optimizing the fast Rydberg quantum gate. Physical Review A, 2003, 67, .	1.0	50
58	Quantum information with neutral atoms as qubits. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 1417-1427.	1.6	51
59	Predissociations in O_u^+ and 1g states of K_2 . Journal of Chemical Physics, 2002, 117, 7491-7505.	1.2	17
60	Optimizing a Phase Gate Using Quantum Interference. Physical Review Letters, 2002, 88, 077901.	2.9	49
61	Measurement of the zero crossing in a Feshbach resonance of fermionic 6Li . Physical Review A, 2002, 66, .	1.0	78
62	Designing neutral-atom nanotraps with integrated optical waveguides. Physical Review A, 2002, 65, .	1.0	41
63	Intensity effects in ultracold photoassociation line shapes. Physical Review A, 2002, 66, .	1.0	37
64	Flat-phase loading of a Bose-Einstein condensate into an optical lattice. Physical Review A, 2002, 66, .	1.0	22
65	Quantum Computing and Communication. Advances in Computers, 2002, 56, 189-244.	1.2	14
66	Photodissociation spectroscopy of stored CH^+ ions: Detection, assignment, and close-coupled modeling of near-threshold Feshbach resonances. Journal of Chemical Physics, 2002, 117, 8754-8777.	1.2	42
67	Creation of a Molecular Condensate by Dynamically Melting a Mott Insulator. Physical Review Letters, 2002, 89, 040402.	2.9	177
68	Quantum logic for trapped atoms via molecular hyperfine interactions. Physical Review A, 2002, 65, .	1.0	33
69	Quantum encounters of the cold kind. Nature, 2002, 416, 225-232.	13.7	81
70	Collisional Frequency Shifts in ^{133}Cs Fountain Clocks. Physical Review Letters, 2001, 86, 3743-3746.	2.9	54
71	Collision Properties of Ultracold ^{133}Cs Atoms. Physical Review Letters, 2000, 85, 2721-2724.	2.9	130
72	ULTRACOLD MATTER:Molecules at Rest. Science, 2000, 287, 986-987.	6.0	29

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73	Cold Collision Frequency Shifts in a87RbAtomic Fountain. Physical Review Letters, 2000, 85, 3117-3120.	2.9	119
74	Determination of the scattering lengths of39Kfrom1uphotoassociation line shapes. Physical Review A, 1999, 60, 4427-4438.	1.0	32
75	Atom loss from Bose-Einstein condensates due to Feshbach resonance. Physical Review A, 1999, 60, R765-R768.	1.0	76
76	Photoassociative spectroscopy of highly excited vibrational levels of alkali-metal dimers: Green-function approach for eigenvalue solvers. Physical Review A, 1998, 57, 4257-4267.	1.0	69
77	Precise determination of the dipole matrix element and radiative lifetime of theK394p state by photoassociative spectroscopy. Physical Review A, 1997, 55, R1569-R1572.	1.0	86
78	Collisional Stability of Double Bose Condensates. Physical Review Letters, 1997, 78, 1880-1883.	2.9	112
79	Role of attractive interactions on Bose-Einstein condensation. Physical Review A, 1996, 54, 661-664.	1.0	138
80	Measurement of the atomic Na(3 P) lifetime and of retardation in the interaction between two atoms bound in a molecule. Europhysics Letters, 1996, 35, 85-90.	0.7	121
81	Hyperfine structure of theNa2Â0gâ~long-range molecular state. Physical Review A, 1996, 53, R1939-R1942.	1.0	26
82	Direct measurement of the ground-state dissociation energy ofNa2. Physical Review A, 1996, 54, R1006-R1009.	1.0	76
83	Precise atomic radiative lifetime via photoassociative spectroscopy of ultracold lithium. Physical Review A, 1995, 51, R871-R874.	1.0	118
84	Line Shapes of High Resolution Photoassociation Spectra of Optically Cooled Atoms. Physical Review Letters, 1994, 73, 1352-1355.	2.9	134
85	Molecular hyperfine structure in the photoassociation spectroscopy of laser cooled atoms. Journal of Chemical Physics, 1994, 101, 2634-2637.	1.2	56
86	Mass effects in the theoretical determination of nuclear-spin relaxation rates for atomic hydrogen and deuterium. Physical Review A, 1993, 47, 1524-1527.	1.0	35
87	Nested interaction representations in time dependent quantum mechanics. Journal of Chemical Physics, 1992, 96, 2998-3009.	1.2	35
88	Understanding the origin of rotational distributions in triatomic photodissociation: A kâ€“j wave packet study of ICN. Journal of Chemical Physics, 1992, 97, 6300-6308.	1.2	16
89	Dynamics of triatomic photodissociation in the interaction representation. I. Methodology. Journal of Chemical Physics, 1991, 95, 1721-1737.	1.2	62
90	Influence of initial state bendâ€“stretch couplings on product rotational distributions in photodissociation of bent triatomic molecules. Chemical Physics Letters, 1991, 182, 297-303.	1.2	6

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91	Three-dimensional analytic quantum theory for triatomic photodissociations. II. Angle dependent dissociative surfaces and rotational infinite order sudden approximation for bent triatomics. Journal of Chemical Physics, 1990, 92, 7283-7301.	1.2	11
92	Close-coupled calculations of resonance widths observed in photodissociation spectra of CH ⁺ . Journal of Chemical Physics, 1989, 90, 6070-6076.	1.2	9
93	Three-dimensional analytical quantum mechanical theory for triatomic photodissociation: Role of angle dependent dissociative surfaces on rotational and angular distributions in the rotational infinite order sudden limit. Journal of Chemical Physics, 1987, 86, 5456-5478.	1.2	14
94	Non-adiabatic effects on the photodissociation of diatomic molecules to open-shell atoms. Resonances, polarizations and angular distributions for the CH ⁺ model systems. Faraday Discussions of the Chemical Society, 1986, 82, 51.	2.2	20
95	Spectroscopy of low-energy non-adiabatic resonances in photodissociation to open-shell atoms: CH ⁺ , a model system. Chemical Physics Letters, 1986, 127, 360-366.	1.2	10
96	Non-adiabatic effects on oxygen atom fine structure populations in the predissociation of the A ² Σ ⁺ state of OH. Chemical Physics Letters, 1986, 130, 271-277.	1.2	10
97	Dynamics and spectroscopy of near threshold nonadiabatic resonances in photodissociation to open shell atoms: CH ⁺ a model system. Journal of Chemical Physics, 1986, 85, 2699-2717.	1.2	43