Georg Raithel

List of Publications by Year
in descending order

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118 papers	3,601 citations	126907 33 h-index	144013 57 g-index
118 all docs	118 docs citations	118 times ranked	1212 citing authors

#	Article	IF	Citations
1	Nonadiabatic decay of Rydberg-atomâ€“ion molecules. Physical Review A, 2022, 105, .	2.5	7
2	Gauge effects in bound-bound Rydberg transition matrix elements. Physical Review A, 2022, 105, .	2.5	1
3	Optical Radio-Frequency Phase Measurement With an Internal-State Rydberg Atom Interferometer. Physical Review Applied, 2022, 17, .	3.8	15
4	A Multiple-Band Rydberg Atom-Based Receiver: AM/FM Stereo Reception. IEEE Antennas and Propagation Magazine, 2021, 63, 63-76.	1.4	52
5	An Atomic Receiver for AM and FM Radio Communication. IEEE Transactions on Antennas and Propagation, 2021, 69, 2455-2462.	5.1	74
6	Long-range Rydberg-atomâ€“ion molecules of Rb and Cs. Physical Review Research, 2021, 3, .	3.6	22
7	Photoionization of Rydberg atoms in optical lattices. New Journal of Physics, 2021, 23, 063074.	2.9	6
8	Photoionization of nS and nD Rydberg atoms of Rb and Cs from the near-infrared to the ultraviolet spectral region. New Journal of Physics, 2021, 23, 063022.	2.9	4
9	Tractor atom interferometry. Physical Review A, 2021, 104, .	2.5	5
10	A Self-Calibrated SI-Traceable Rydberg Atom-Based Radio Frequency Electric Field Probe and Measurement Instrument. IEEE Transactions on Antennas and Propagation, 2021, 69, 5931-5941.	5.1	32
11	ac polarizability and photoionization-cross-section measurements in an optical lattice. Physical Review A, 2021, 104, .	2.5	3
12	Magneto-Optical Trap with Millimeter Ball Lenses. Physical Review Applied, 2020, 14, .	3.8	4
13	Rydberg Atoms for Radio-Frequency Communications and Sensing: Atomic Receivers for Pulsed RF Field and Phase Detection. IEEE Aerospace and Electronic Systems Magazine, 2020, 35, 48-56.	1.3	36
14	Optical control of atom-ion collisions using a Rydberg state. Journal of Physics B: Atomic, Molecular and Optical Physics, 2020, 53, 134005.	1.5	9
15	Time dependence of Rydberg EIT in pulsed optical and RF fields. Journal of Physics B: Atomic, Molecular and Optical Physics, 2020, 53, 094003.	1.5	16
16	Circularizing Rydberg atoms with time-dependent optical traps. Physical Review A, 2020, 101, .	2.5	16
17	Modulation spectroscopy of Rydberg atoms in an optical lattice. Physical Review A, 2020, 101, .	2.5	7
18	Doppler narrowing, Zeeman and laser beam-shape effects in Î›-type electromagnetically induced transparency on the 85Rb D2 line in a vapor cell. Journal of Physics Communications, 2020, 4, 095020.	1.2	4

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19	Cesium <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>n</mml:mi><mml:msub><mml:mi>D</mml:mi> Rydberg molecules and their permanent electric dipole moments. Physical Review Research, 2020, 2, .	3.6	8
20	DC electric fields in electrode-free glass vapor cell by photoillumination. Optics Express, 2020, 28, 3676.	3.4	9
21	Atomic 2D electric field imaging of a Yagiâ€“Uda antenna near-field using a portable Rydberg-atom probe and measurement instrument. Advanced Optical Technologies, 2020, 9, 305-312.	1.7	8
22	Measurement of the Rb <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>g</mml:mi></mml:math> -series quantum defect using two-photon microwave spectroscopy. Physical Review A, 2020, 102, .	2.5	7
23	Atomic measurements of high-intensity VHF-band radio-frequency fields with a Rydberg vapor-cell detector. Physical Review A, 2019, 100, .	2.5	30
24	Adiabatic potentials of cesium (nD _J)₂ Rydbergâ€“Rydberg macrodimers. Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, 52, 135102.	1.5	6
25	Rydberg electromagnetically induced transparency in a large Hilbert space. Physical Review A, 2019, 99, .	2.5	12
26	Deeply bound (<mml:math) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 477 Td (xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Rb</mml:mi><mml:mprescripts /><mml:none /><mml:mn>87</mml:mn></mml:mmultiscripts></mml:math>. Physical Review A, 2019, 99, .	2.5	25
27	Atom-based receiver for amplitude-modulated baseband signals in high-frequency radio communication. Applied Physics Express, 2019, 12, 126002.	2.4	51
28	Measurement of the hyperfine coupling constant for <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>n</mml:mi><mml:msub><mml:mi>S</mml:mi><mml:mro Rydberg states of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Rb</mml:mi><mml:mprescripts /><mml:none /><mml:mn>85</mml:mn></mml:mmultiscripts></mml:math>. Physical Review A, 2019, 100, .	2.5	10
29	Electromagnetically induced transparency, absorption, and microwave-field sensing in a Rb vapor cell with a three-color all-infrared laser system. Physical Review A, 2019, 100, .	2.5	45
30	Cs <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>62</mml:mn><mml:msub><mml:mi>D</mml:mi> Rydberg-atom macrodimers formed by long-range multipole interaction. Physical Review A, 2018, 97, .	2.5	22
31	High-Resolution Antenna Near-Field Imaging and Sub-THz Measurements with a Small Atomic Vapor-Cell Sensing Element. , 2018, , .		12
32	High-Intensity Electric Field Measurements with Rydberg Vapors. , 2018, , .		0
33	Transition from electromagnetically induced transparency to Autlerâ€“Townes splitting in cold cesium atoms. New Journal of Physics, 2018, 20, 073024.	2.9	31
34	A vapor-cell atomic sensor for radio-frequency field detection using a polarization-selective field enhancement resonator. Applied Physics Letters, 2018, 113, .	3.3	35
35	Electromagnetically Induced Transparency (EIT) and Autler-Townes (AT) splitting in the presence of band-limited white Gaussian noise. Journal of Applied Physics, 2018, 123, .	2.5	28
36	Atom-Based RF Electric Field Metrology: From Self-Calibrated Measurements to Subwavelength and Near-Field Imaging. IEEE Transactions on Electromagnetic Compatibility, 2017, 59, 717-728.	2.2	98

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37	Electromagnetically induced transparency in modulated laser fields. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 035001.	1.5	1
38	Electric field metrology for SI traceability: Systematic measurement uncertainties in electromagnetically induced transparency in atomic vapor. Journal of Applied Physics, 2017, 121, .	2.5	141
39	Control of Spatial Correlations between Rydberg Excitations using Rotary Echo. Physical Review Letters, 2017, 118, 133401.	7.8	11
40	Measuring the Rydberg constant using circular Rydberg atoms in an intensity-modulated optical lattice. Physical Review A, 2017, 96, .	2.5	23
41	Continuous-frequency measurements of high-intensity microwave electric fields with atomic vapor cells. Applied Physics Letters, 2017, 111, .	3.3	38
42	Atom-Based Radio-Frequency Field Calibration and Polarization Measurement Using Cesium <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>n</mml:mi><mml:msub><mml:mrow><mml:mi>D</mml:mi></mml:mrow><mml:mrow><mml:m Floquet States. Physical Review Applied, 2017, 8, .	3.8	47
43	Photoassociation of Trilobite Rydberg Molecules via Resonant Spin-Orbit Coupling. Physical Review Letters, 2017, 118, 223001.	7.8	29
44	Paschen-Back effects and Rydberg-state diamagnetism in vapor-cell electromagnetically induced transparency. Physical Review A, 2017, 95, .	2.5	16
45	Radio-frequency-modulated Rydberg states in a vapor cell. New Journal of Physics, 2016, 18, 053017.	2.9	47
46	Using frequency detuning to improve the sensitivity of electric field measurements via electromagnetically induced transparency and Autler-Townes splitting in Rydberg atoms. Applied Physics Letters, 2016, 108, .	3.3	94
47	Spectroscopy of cesium Rydberg atoms in strong radio-frequency fields. Physical Review A, 2016, 94, .	2.5	41
48	Atom-Pair Kinetics with Strong Electric-Dipole Interactions. Physical Review Letters, 2016, 116, 213002.	7.8	16
49	Optical Measurements of Strong Microwave Fields with Rydberg Atoms in a Vapor Cell. Physical Review Applied, 2016, 5, .	3.8	104
50	Atom-based RF electric field measurements: An initial investigation of the measurement uncertainties. , 2015, , .		6
51	Measurement of Rb<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>5</mml:mn><mml:msub><mml:mi>P</mml:mi><mml:mn> and tensor polarizabilities in a 1064-nm light field. Physical Review A, 2015, 92, .	2.8	7
52	Probe of Rydberg-Atom Transitions via an Amplitude-Modulated Optical Standing Wave with a Ponderomotive Interaction. Physical Review Letters, 2015, 115, 163003.	7.8	5
53	Atom-interferometric measurement of Stark level splittings. Physical Review A, 2015, 92, .	2.5	6
54	Atom-based RF field probe: From self-calibrated measurements to sub-wavelength imaging. , 2015, , .		0

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55	Forbidden atomic transitions driven by an intensity-modulated laser trap. Nature Communications, 2015, 6, 6090.	12.8	11
56	Angular-momentum couplings in long-range<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi mathvariant="normal">Rb</mml:mi></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:math>Rydberg molecules. Physical Review A, 2014, 90, .	2.5	56
57	Atom trapping and spectroscopy in cavity-generated optical potentials. Physical Review A, 2014, 89, .	2.5	12
58	Pressure-driven evaporative cooling in atom guides. Physical Review A, 2014, 90, .	2.5	2
59	Sub-wavelength imaging and field mapping via electromagnetically induced transparency and Autler-Townes splitting in Rydberg atoms. Applied Physics Letters, 2014, 104, .	3.3	153
60	Millimeter wave detection via Autler-Townes splitting in rubidium Rydberg atoms. Applied Physics Letters, 2014, 105, .	3.3	140
61	Photoassociation of Long-Range<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>n</mml:mi><mml:mi>D</mml:mi></mml:mrow></mml:math>Rydberg Molecules. Physical Review Letters, 2014, 112, 163201.	7.8	77
62	Autler-Townes spectroscopy with interaction-induced dephasing. Physical Review A, 2014, 90, .	2.5	19
63	Two-photon microwave transitions and strong-field effects in a room-temperature Rydberg-atom gas. Physical Review A, 2014, 90, .	2.5	47
64	Broadband Rydberg Atom-Based Electric-Field Probe for SI-Traceable, Self-Calibrated Measurements. IEEE Transactions on Antennas and Propagation, 2014, 62, 6169-6182.	5.1	249
65	Broadband Rydberg atom based self-calibrating RF E-field probe. , 2014, , .		0
66	Ionization of Rydberg atoms by standing-wave light fields. Nature Communications, 2013, 4, 2967.	12.8	9
67	Production and trapping of cold circular Rydberg atoms. Physical Review A, 2013, 88, .	2.5	25
68	Coupled internal-state and center-of-mass dynamics of Rydberg atoms in a magnetic guide. Physical Review A, 2013, 87, .	2.5	3
69	Bragg scattering and Brownian motion dynamics in optically induced crystals of submicron particles. Physical Review E, 2013, 87, 052311.	2.1	2
70	Dependence of Rydberg-Atom Optical Lattices on the Angular Wave Function. Physical Review Letters, 2012, 109, 023001.	7.8	11
71	Guiding of Rydberg atoms in a high-gradient magnetic guide. Physical Review A, 2012, 86, .	2.5	1
72	Trapping Rydberg Atoms in an Optical Lattice. Physical Review Letters, 2011, 107, 263001.	7.8	101

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73	Three-dimensional arrays of submicron particles generated by a four-beam optical lattice. Physical Review E, 2011, 83, 051406.	2.1	13
74	Imaging Spatial Correlations of Rydberg Excitations in Cold Atom Clouds. Physical Review Letters, 2011, 107, 103001.	7.8	99
75	Adiabatic potentials for Rydberg atoms in a ponderomotive optical lattice. New Journal of Physics, 2010, 12, 023031.	2.9	22
76	Rydberg-atom trajectories in a ponderomotive optical lattice. New Journal of Physics, 2010, 12, 113036.	2.9	6
77	State-Dependent Energy Shifts of Rydberg Atoms in a Ponderomotive Optical Lattice. Physical Review Letters, 2010, 104, 173001.	7.8	44
78	Mesoscopic Rydberg ensembles: Beyond the pairwise-interaction approximation. Physical Review A, 2009, 79, .	2.5	54
79	Reversible loss of superfluidity of a Boseâ€“Einstein condensate in a 1D optical lattice. New Journal of Physics, 2009, 11, 013013.	2.9	14
80	Rotary echo tests of coherence in Rydberg-atom excitation. New Journal of Physics, 2009, 11, 043006.	2.9	18
81	Trapping and Evolution Dynamics of Ultracold Two-Component Plasmas. Physical Review Letters, 2008, 100, 175002.	7.8	10
82	Atoms and plasmas in a high-magnetic-field trap. AIP Conference Proceedings, 2008, , .	0.4	1
83	Rydberg-Rydberg Collisions: Resonant Enhancement of State Mixing and Penning Ionization. Physical Review Letters, 2008, 100, 123007.	7.8	46
84	Multipole transitions of Rydberg atoms in modulated ponderomotive potentials. Physical Review A, 2007, 75, .	2.5	20
85	Publisher's Note: Level shifts of rubidium Rydberg states due to binary interactions [Phys. Rev. A75, 032712 (2007)]. Physical Review A, 2007, 75, .	2.5	10
86	Level shifts of rubidium Rydberg states due to binary interactions. Physical Review A, 2007, 75, .	2.5	121
87	Cold Rydberg Atoms. Advances in Atomic, Molecular and Optical Physics, 2007, , 131-202.	2.3	21
88	Effects of static and random magnetic fields on atoms in a gray optical lattice. Laser Physics, 2007, 17, 948-955.	1.2	0
89	Open-channel fluorescence imaging of atoms in high-gradient magnetic fields. European Physical Journal D, 2007, 41, 221-227.	1.3	6
90	Continuous propagation and energy filtering of a cold atomic beam in a long high-gradient magnetic atom guide. Physical Review A, 2006, 73, .	2.5	20

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91	Atom Manipulation in Optical Lattices. Advances in Atomic, Molecular and Optical Physics, 2006, , 187-225.	2.3	11
92	Magnetic trapping of strongly-magnetized Rydberg atoms. European Physical Journal D, 2006, 40, 19-26.	1.3	5
93	Emission of fast atoms from a cold Rydberg gas. Physical Review A, 2006, 73, .	2.5	13
94	Interactions and Trapping of Cold Rydberg Atoms. , 2006, , .		0
95	Simple pressure-tuned Fabryâ€“PÃ©rot interferometer. Review of Scientific Instruments, 2005, 76, 033105.	1.3	12
96	Magnetic Trapping of Long-Lived Cold Rydberg Atoms. Physical Review Letters, 2005, 95, 243001.	7.8	66
97	Laser Cooling and Magnetic Trapping at Several Tesla. Physical Review Letters, 2005, 94, 073003.	7.8	18
98	Landau Quantization and Time Dependence in the Ionization of Cold, Strongly Magnetized Rydberg Atoms. Physical Review Letters, 2005, 95, 253005.	7.8	8
99	Atom Counting Statistics in Ensembles of Interacting Rydberg Atoms. Physical Review Letters, 2005, 95, 253002.	7.8	169
100	Cold-Rydberg-gas dynamics. Physical Review A, 2004, 69, .	2.5	71
101	Effect of atomic density on wavepacket motion of atoms in an optical lattice. , 2003, , .		0
102	Decay rates of high-|m|Rydberg states in strong magnetic fields. Physical Review A, 2003, 68, .	2.5	26
103	Cold Rydberg atoms and plasmas in strong magnetic fields. , 2003, , .		0
104	High-|m|Rydberg states in strong magnetic fields. Physical Review A, 2003, 68, .	2.5	18
105	Rydberg atom gases and cold plasmas in cryogenic traps. , 2003, , .		0
106	Tunneling Resonances and Coherence in an Optical Lattice. Physical Review Letters, 2002, 88, 173001.	7.8	9
107	Coulomb Expansion of Laser-Excited Ion Plasmas. Physical Review Letters, 2002, 89, 173004.	7.8	21
108	High-Angular-Momentum States in Cold Rydberg Gases. Physical Review Letters, 2001, 86, 3993-3996.	7.8	100

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109	Ponderomotive Optical Lattice for Rydberg Atoms. Physical Review Letters, 2000, 85, 5551-5554.	7.8	81
110	Tunneling Dynamics and Gauge Potentials in Optical Lattices. Physical Review Letters, 1999, 83, 1934-1937.	7.8	48
111	Collapse and Revivals of Wave Packets in Optical Lattices. Physical Review Letters, 1998, 81, 3615-3618.	7.8	77
112	Magnetization and spin-flip dynamics of atoms in optical lattices. Physical Review A, 1998, 58, R2660-R2663.	2.5	7
113	Observation of high angular momentum states of Rydberg atoms in strong magnetic and weak crossed electric fields. Journal of Physics B: Atomic, Molecular and Optical Physics, 1995, 28, 1687-1706.	1.5	15
114	Effect of tunneling resonances on the paramagnetism of an optical lattice. , 0, , .		0
115	Feedback control of atomic motion in optical lattices. , 0, , .		0
116	Loading mechanism for atomic guides. , 0, , .		0
117	Coherent population transfer of ground state atoms into Rydberg states. , 0, , .		1
118	Raman optical lattice. , 0, , .		0