

Georg Raithel

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/3356038/publications.pdf>

Version: 2024-02-01

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	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
2	Atom Counting Statistics in Ensembles of Interacting Rydberg Atoms. Physical Review Letters, 2005, 95, 253002.	7.8	169
3	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
4	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
5	Millimeter wave detection via Autler-Townes splitting in rubidium Rydberg atoms. Applied Physics Letters, 2014, 105, .	3.3	140
6	Level shifts of rubidium Rydberg states due to binary interactions. Physical Review A, 2007, 75, .	2.5	121
7	Optical Measurements of Strong Microwave Fields with Rydberg Atoms in a Vapor Cell. Physical Review Applied, 2016, 5, .	3.8	104
8	Trapping Rydberg Atoms in an Optical Lattice. Physical Review Letters, 2011, 107, 263001.	7.8	101
9	High-Angular-Momentum States in Cold Rydberg Gases. Physical Review Letters, 2001, 86, 3993-3996.	7.8	100
10	Imaging Spatial Correlations of Rydberg Excitations in Cold Atom Clouds. Physical Review Letters, 2011, 107, 103001.	7.8	99
11	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
12	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
13	Ponderomotive Optical Lattice for Rydberg Atoms. Physical Review Letters, 2000, 85, 5551-5554.	7.8	81
14	Collapse and Revivals of Wave Packets in Optical Lattices. Physical Review Letters, 1998, 81, 3615-3618.	7.8	77
15	Photoassociation of Long-Range nD Rydberg Molecules. Physical Review Letters, 2014, 112, 163201.	7.8	77
16	An Atomic Receiver for AM and FM Radio Communication. IEEE Transactions on Antennas and Propagation, 2021, 69, 2455-2462.	5.1	74
17	Cold-Rydberg-gas dynamics. Physical Review A, 2004, 69, .	2.5	71
18	Magnetic Trapping of Long-Lived Cold Rydberg Atoms. Physical Review Letters, 2005, 95, 243001.	7.8	66

#	ARTICLE	IF	CITATIONS
19	Angular-momentum couplings in long-range Rydberg molecules. Physical Review A, 2014, 90, .	2.5	56
20	Mesoscopic Rydberg ensembles: Beyond the pairwise-interaction approximation. Physical Review A, 2009, 79, .	2.5	54
21	A Multiple-Band Rydberg Atom-Based Receiver: AM/FM Stereo Reception. IEEE Antennas and Propagation Magazine, 2021, 63, 63-76.	1.4	52
22	Atom-based receiver for amplitude-modulated baseband signals in high-frequency radio communication. Applied Physics Express, 2019, 12, 126002.	2.4	51
23	Tunneling Dynamics and Gauge Potentials in Optical Lattices. Physical Review Letters, 1999, 83, 1934-1937.	7.8	48
24	Two-photon microwave transitions and strong-field effects in a room-temperature Rydberg-atom gas. Physical Review A, 2014, 90, .	2.5	47
25	Radio-frequency-modulated Rydberg states in a vapor cell. New Journal of Physics, 2016, 18, 053017.	2.9	47
26	Atom-Based Radio-Frequency Field Calibration and Polarization Measurement Using Cesium Floquet States. Physical Review Applied, 2017, 8, .	3.8	47
27	Rydberg-Rydberg Collisions: Resonant Enhancement of State Mixing and Penning Ionization. Physical Review Letters, 2008, 100, 123007.	7.8	46
28	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
29	State-Dependent Energy Shifts of Rydberg Atoms in a Ponderomotive Optical Lattice. Physical Review Letters, 2010, 104, 173001.	7.8	44
30	Spectroscopy of cesium Rydberg atoms in strong radio-frequency fields. Physical Review A, 2016, 94, .	2.5	41
31	Continuous-frequency measurements of high-intensity microwave electric fields with atomic vapor cells. Applied Physics Letters, 2017, 111, .	3.3	38
32	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
33	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
34	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
35	Transition from electromagnetically induced transparency to Autler-Townes splitting in cold cesium atoms. New Journal of Physics, 2018, 20, 073024.	2.9	31
36	Atomic measurements of high-intensity VHF-band radio-frequency fields with a Rydberg vapor-cell detector. Physical Review A, 2019, 100, .	2.5	30

#	ARTICLE	IF	CITATIONS
37	Photoassociation of Trilobite Rydberg Molecules via Resonant Spin-Orbit Coupling. Physical Review Letters, 2017, 118, 223001.	7.8	29
38	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
39	Decay rates of high- $ m $ Rydberg states in strong magnetic fields. Physical Review A, 2003, 68, .	2.5	26
40	Production and trapping of cold circular Rydberg atoms. Physical Review A, 2013, 88, .	2.5	25
41	Deeply bound ($\langle m E Qq 1 1\rangle$) Rydberg molecules in strong magnetic fields. Physical Review A, 2019, 99, .	2.5	25
42	Measuring the Rydberg constant using circular Rydberg atoms in an intensity-modulated optical lattice. Physical Review A, 2017, 96, .	2.5	23
43	Adiabatic potentials for Rydberg atoms in a ponderomotive optical lattice. New Journal of Physics, 2010, 12, 023031.	2.9	22
44	Cs Rydberg-atom macrodimers formed by long-range multipole interaction. Physical Review A, 2018, 97, .	2.5	22
45	Long-range Rydberg-atom ion molecules of Rb and Cs. Physical Review Research, 2021, 3, .	3.6	22
46	Coulomb Expansion of Laser-Excited Ion Plasmas. Physical Review Letters, 2002, 89, 173004.	7.8	21
47	Cold Rydberg Atoms. Advances in Atomic, Molecular and Optical Physics, 2007, , 131-202.	2.3	21
48	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
49	Multipole transitions of Rydberg atoms in modulated ponderomotive potentials. Physical Review A, 2007, 75, .	2.5	20
50	Autler-Townes spectroscopy with interaction-induced dephasing. Physical Review A, 2014, 90, .	2.5	19
51	High- $ m $ Rydberg states in strong magnetic fields. Physical Review A, 2003, 68, .	2.5	18
52	Laser Cooling and Magnetic Trapping at Several Tesla. Physical Review Letters, 2005, 94, 073003.	7.8	18
53	Rotary echo tests of coherence in Rydberg-atom excitation. New Journal of Physics, 2009, 11, 043006.	2.9	18
54	Atom-Pair Kinetics with Strong Electric-Dipole Interactions. Physical Review Letters, 2016, 116, 213002.	7.8	16

#	ARTICLE	IF	CITATIONS
55	Paschen-Back effects and Rydberg-state diamagnetism in vapor-cell electromagnetically induced transparency. <i>Physical Review A</i> , 2017, 95, .	2.5	16
56	Time dependence of Rydberg EIT in pulsed optical and RF fields. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2020, 53, 094003.	1.5	16
57	Circularizing Rydberg atoms with time-dependent optical traps. <i>Physical Review A</i> , 2020, 101, .	2.5	16
58	Observation of high angular momentum states of Rydberg atoms in strong magnetic and weak crossed electric fields. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1995, 28, 1687-1706.	1.5	15
59	Optical Radio-Frequency Phase Measurement With an Internal-State Rydberg Atom Interferometer. <i>Physical Review Applied</i> , 2022, 17, .	3.8	15
60	Reversible loss of superfluidity of a Bose-Einstein condensate in a 1D optical lattice. <i>New Journal of Physics</i> , 2009, 11, 013013.	2.9	14
61	Emission of fast atoms from a cold Rydberg gas. <i>Physical Review A</i> , 2006, 73, .	2.5	13
62	Three-dimensional arrays of submicron particles generated by a four-beam optical lattice. <i>Physical Review E</i> , 2011, 83, 051406.	2.1	13
63	Simple pressure-tuned Fabry-Pérot interferometer. <i>Review of Scientific Instruments</i> , 2005, 76, 033105.	1.3	12
64	Atom trapping and spectroscopy in cavity-generated optical potentials. <i>Physical Review A</i> , 2014, 89, .	2.5	12
65	High-Resolution Antenna Near-Field Imaging and Sub-THz Measurements with a Small Atomic Vapor-Cell Sensing Element. , 2018, , .		12
66	Rydberg electromagnetically induced transparency in a large Hilbert space. <i>Physical Review A</i> , 2019, 99, .	2.5	12
67	Atom Manipulation in Optical Lattices. <i>Advances in Atomic, Molecular and Optical Physics</i> , 2006, , 187-225.	2.3	11
68	Dependence of Rydberg-Atom Optical Lattices on the Angular Wave Function. <i>Physical Review Letters</i> , 2012, 109, 023001.	7.8	11
69	Forbidden atomic transitions driven by an intensity-modulated laser trap. <i>Nature Communications</i> , 2015, 6, 6090.	12.8	11
70	Control of Spatial Correlations between Rydberg Excitations using Rotary Echo. <i>Physical Review Letters</i> , 2017, 118, 133401.	7.8	11
71	Publisher's Note: Level shifts of rubidium Rydberg states due to binary interactions [Phys. Rev. A75, 032712 (2007)]. <i>Physical Review A</i> , 2007, 75, .	2.5	10
72	Trapping and Evolution Dynamics of Ultracold Two-Component Plasmas. <i>Physical Review Letters</i> , 2008, 100, 175002.	7.8	10

#	ARTICLE	IF	CITATIONS
73	Measurement of the hyperfine coupling constant for nS Rydberg states of Rb . <i>Physical Review A</i> , 2019, 100, .	2.5	10
74	Tunneling Resonances and Coherence in an Optical Lattice. <i>Physical Review Letters</i> , 2002, 88, 173001.	7.8	9
75	Ionization of Rydberg atoms by standing-wave light fields. <i>Nature Communications</i> , 2013, 4, 2967.	12.8	9
76	Optical control of atom-ion collisions using a Rydberg state. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2020, 53, 134005.	1.5	9
77	DC electric fields in electrode-free glass vapor cell by photoillumination. <i>Optics Express</i> , 2020, 28, 3676.	3.4	9
78	Landau Quantization and Time Dependence in the Ionization of Cold, Strongly Magnetized Rydberg Atoms. <i>Physical Review Letters</i> , 2005, 95, 253005.	7.8	8
79	Cesium nD Rydberg molecules and their permanent electric dipole moments. <i>Physical Review Research</i> , 2020, 2, .	2.6	8
80	Atomic 2D electric field imaging of a Yagi-Uda antenna near-field using a portable Rydberg-atom probe and measurement instrument. <i>Advanced Optical Technologies</i> , 2020, 9, 305-312.	1.7	8
81	Magnetization and spin-flip dynamics of atoms in optical lattices. <i>Physical Review A</i> , 1998, 58, R2660-R2663.	2.5	7
82	Measurement of Rb $5D$ and tensor polarizabilities in a 1064-nm light field. <i>Physical Review A</i> , 2015, 92, .	2.3	7
83	Modulation spectroscopy of Rydberg atoms in an optical lattice. <i>Physical Review A</i> , 2020, 101, .	2.5	7
84	Measurement of the Rb g -series quantum defect using two-photon microwave spectroscopy. <i>Physical Review A</i> , 2020, 102, .	2.5	7
85	Nonadiabatic decay of Rydberg-atom ion molecules. <i>Physical Review A</i> , 2022, 105, .	2.5	7
86	Open-channel fluorescence imaging of atoms in high-gradient magnetic fields. <i>European Physical Journal D</i> , 2007, 41, 221-227.	1.3	6
87	Rydberg-atom trajectories in a ponderomotive optical lattice. <i>New Journal of Physics</i> , 2010, 12, 113036.	2.9	6
88	Atom-based RF electric field measurements: An initial investigation of the measurement uncertainties. , 2015, , .		6
89	Atom-interferometric measurement of Stark level splittings. <i>Physical Review A</i> , 2015, 92, .	2.5	6
90	Adiabatic potentials of cesium nD Rydberg macrodimers. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2019, 52, 135102.	1.5	6

#	ARTICLE	IF	CITATIONS
91	Photoionization of Rydberg atoms in optical lattices. <i>New Journal of Physics</i> , 2021, 23, 063074.	2.9	6
92	Magnetic trapping of strongly-magnetized Rydberg atoms. <i>European Physical Journal D</i> , 2006, 40, 19-26.	1.3	5
93	Probe of Rydberg-Atom Transitions via an Amplitude-Modulated Optical Standing Wave with a Ponderomotive Interaction. <i>Physical Review Letters</i> , 2015, 115, 163003.	7.8	5
94	Tractor atom interferometry. <i>Physical Review A</i> , 2021, 104, .	2.5	5
95	Magneto-Optical Trap with Millimeter Ball Lenses. <i>Physical Review Applied</i> , 2020, 14, .	3.8	4
96	Photoionization of nS and nD Rydberg atoms of Rb and Cs from the near-infrared to the ultraviolet spectral region. <i>New Journal of Physics</i> , 2021, 23, 063022.	2.9	4
97	Doppler narrowing, Zeeman and laser beam-shape effects in $\hat{\nu}$ -type electromagnetically induced transparency on the 85Rb D2 line in a vapor cell. <i>Journal of Physics Communications</i> , 2020, 4, 095020.	1.2	4
98	Coupled internal-state and center-of-mass dynamics of Rydberg atoms in a magnetic guide. <i>Physical Review A</i> , 2013, 87, .	2.5	3
99	ac polarizability and photoionization-cross-section measurements in an optical lattice. <i>Physical Review A</i> , 2021, 104, .	2.5	3
100	Bragg scattering and Brownian motion dynamics in optically induced crystals of submicron particles. <i>Physical Review E</i> , 2013, 87, 052311.	2.1	2
101	Pressure-driven evaporative cooling in atom guides. <i>Physical Review A</i> , 2014, 90, .	2.5	2
102	Coherent population transfer of ground state atoms into Rydberg states. , 0, , .		1
103	Atoms and plasmas in a high-magnetic-field trap. <i>AIP Conference Proceedings</i> , 2008, , .	0.4	1
104	Guiding of Rydberg atoms in a high-gradient magnetic guide. <i>Physical Review A</i> , 2012, 86, .	2.5	1
105	Electromagnetically induced transparency in modulated laser fields. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2017, 50, 035001.	1.5	1
106	Gauge effects in bound-bound Rydberg transition matrix elements. <i>Physical Review A</i> , 2022, 105, .	2.5	1
107	Effect of tunneling resonances on the paramagnetism of an optical lattice. , 0, , .		0
108	Feedback control of atomic motion in optical lattices. , 0, , .		0

#	ARTICLE	IF	CITATIONS
109	Loading mechanism for atomic guides. , 0, , .		0
110	Effect of atomic density on wavepacket motion of atoms in an optical lattice. , 2003, , .		0
111	Cold Rydberg atoms and plasmas in strong magnetic fields. , 2003, , .		0
112	Raman optical lattice. , 0, , .		0
113	Effects of static and random magnetic fields on atoms in a gray optical lattice. Laser Physics, 2007, 17, 948-955.	1.2	0
114	Broadband Rydberg atom based self-calibrating RF E-field probe. , 2014, , .		0
115	Atom-based RF field probe: From self-calibrated measurements to sub-wavelength imaging. , 2015, , .		0
116	High-Intensity Electric Field Measurements with Rydberg Vapors. , 2018, , .		0
117	Rydberg atom gases and cold plasmas in cryogenic traps. , 2003, , .		0
118	Interactions and Trapping of Cold Rydberg Atoms. , 2006, , .		0