

Karen Z Hatsagortsyan

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/3069476/publications.pdf>

Version: 2024-02-01

149
papers

5,226
citations

136950

32
h-index

91884

69
g-index

149
all docs

149
docs citations

149
times ranked

2025
citing authors

#	ARTICLE	IF	CITATIONS
1	Extremely high-intensity laser interactions with fundamental quantum systems. <i>Reviews of Modern Physics</i> , 2012, 84, 1177-1228.	45.6	1,340
2	Relativistic high-power laser-matter interactions. <i>Physics Reports</i> , 2006, 427, 41-155.	25.6	412
3	Quantum Radiation Reaction Effects in Multiphoton Compton Scattering. <i>Physical Review Letters</i> , 2010, 105, 220403.	7.8	178
4	Experimental Evidence for Quantum Tunneling Time. <i>Physical Review Letters</i> , 2017, 119, 023201.	7.8	152
5	Light Diffraction by a Strong Standing Electromagnetic Wave. <i>Physical Review Letters</i> , 2006, 97, 083603.	7.8	139
6	Origin of Unexpected Low Energy Structure in Photoelectron Spectra Induced by Midinfrared Strong Laser Fields. <i>Physical Review Letters</i> , 2010, 105, 113003.	7.8	137
7	Pair Production in Laser Fields Oscillating in Space and Time. <i>Physical Review Letters</i> , 2009, 102, 080402.	7.8	134
8	Strong Signatures of Radiation Reaction below the Radiation-Dominated Regime. <i>Physical Review Letters</i> , 2009, 102, 254802.	7.8	127
9	Ultrarelativistic Electron-Beam Polarization in Single-Shot Interaction with an Ultraintense Laser Pulse. <i>Physical Review Letters</i> , 2019, 122, 154801.	7.8	92
10	Under-the-Barrier Dynamics in Laser-Induced Relativistic Tunneling. <i>Physical Review Letters</i> , 2013, 110, 153004.	7.8	88
11	Frontiers of Atomic High-Harmonic Generation. <i>Advances in Atomic, Molecular and Optical Physics</i> , 2012, 61, 159-208.	2.3	87
12	Tunneling Dynamics in Multiphoton Ionization and Attoclock Calibration. <i>Physical Review Letters</i> , 2015, 114, 083001.	7.8	84
13	Spin and radiation in intense laser fields. <i>Physical Review A</i> , 2002, 65, .	2.5	73
14	Harmonic generation from laser-driven vacuum. <i>Physical Review D</i> , 2005, 72, .	4.7	67
15	Polarized Positron Beams via Intense Two-Color Laser Pulses. <i>Physical Review Letters</i> , 2019, 123, 174801.	7.8	65
16	Relativistic features and time delay of laser-induced tunnel ionization. <i>Physical Review A</i> , 2013, 88, .	2.5	58
17	Polarization-operator approach to electron-positron pair production in combined laser and Coulomb fields. <i>Physical Review A</i> , 2006, 73, .	2.5	57
18	Polarized Ultrashort Brilliant Multi-GeV γ Rays via Single-Shot Laser-Electron Interaction. <i>Physical Review Letters</i> , 2020, 124, 014801.	7.8	57

#	ARTICLE	IF	CITATIONS
19	Polarization-operator approach to pair creation in short laser pulses. <i>Physical Review D</i> , 2015, 91, .	4.7	55
20	Probing the ionization wave packet and recollision dynamics with an elliptically polarized strong laser field in the nondipole regime. <i>Physical Review A</i> , 2018, 97, .	2.5	55
21	Nonperturbative Vacuum-Polarization Effects in Proton-Laser Collisions. <i>Physical Review Letters</i> , 2008, 100, 010403.	7.8	52
22	Bragg Scattering of Light in Vacuum Structured by Strong Periodic Fields. <i>Physical Review Letters</i> , 2011, 107, 053604.	7.8	52
23	$\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \rangle \langle \text{mml:mi} \rangle \hat{I}^3 \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -Ray Beams with Large Orbital Angular Momentum via Nonlinear Compton Scattering with Radiation Reaction. <i>Physical Review Letters</i> , 2018, 121, 074801.	7.8	44
24	Ultrarelativistic polarized positron jets via collision of electron and ultraintense laser beams. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2020, 800, 135120.	4.1	43
25	Fully relativistic laser-induced ionization and recollision processes. <i>Physical Review A</i> , 2007, 75, .	2.5	42
26	Attosecond Gamma-Ray Pulses via Nonlinear Compton Scattering in the Radiation-Dominated Regime. <i>Physical Review Letters</i> , 2015, 115, 204801.	7.8	41
27	Above-threshold ionization beyond the dipole approximation. <i>Physical Review A</i> , 2005, 71, .	2.5	37
28	Positronium in Intense Laser Fields. <i>Physical Review Letters</i> , 2004, 93, .	7.8	35
29	Coulomb focusing in above-threshold ionization in elliptically polarized midinfrared strong laser fields. <i>Physical Review A</i> , 2012, 85, .	2.5	35
30	Muon pair creation from positronium in a circularly polarized laser field. <i>Physical Review D</i> , 2006, 74, .	4.7	34
31	Wigner time delay for tunneling ionization via the electron propagator. <i>Physical Review A</i> , 2014, 90, .	2.5	34
32	Fields of an ultrashort tightly focused laser pulse. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2016, 33, 405.	2.1	34
33	Enhancement of vacuum polarization effects in a plasma. <i>Physics of Plasmas</i> , 2007, 14, 032102.	1.9	33
34	Robust Signatures of Quantum Radiation Reaction in Focused Ultrashort Laser Pulses. <i>Physical Review Letters</i> , 2014, 113, 044801.	7.8	33
35	Photoemission of a Single-Electron Wave Packet in a Strong Laser Field. <i>Physical Review Letters</i> , 2008, 100, 153601.	7.8	32
36	Above-threshold ionization with highly charged ions in superstrong laser fields. II. Relativistic Coulomb-corrected strong-field approximation. <i>Physical Review A</i> , 2013, 87, .	2.5	32

#	ARTICLE	IF	CITATIONS
37	Interplay between Coulomb-focusing and non-dipole effects in strong-field ionization with elliptical polarization. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2018, 51, 114001.	1.5	32
38	Gauge-invariant relativistic strong-field approximation. <i>Physical Review A</i> , 2006, 73, .	2.5	29
39	Microscopic laser-driven high-energy colliders. <i>Europhysics Letters</i> , 2006, 76, 29-35.	2.0	29
40	Relativistic ionization rescattering with tailored laser pulses. <i>Physical Review A</i> , 2006, 74, .	2.5	29
41	Coherent hard x rays from attosecond pulse train-assisted harmonic generation. <i>Optics Letters</i> , 2008, 33, 411.	3.3	29
42	Above-threshold ionization with highly charged ions in superstrong laser fields. I. Coulomb-corrected strong-field approximation. <i>Physical Review A</i> , 2013, 87, .	2.5	28
43	Spin dynamics in relativistic ionization with highly charged ions in super-strong laser fields. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2014, 47, 065603.	1.5	28
44	Generalized eikonal wave function of a Dirac particle interacting with an arbitrary potential and radiation fields. <i>Physical Review A</i> , 1999, 59, 549-558.	2.5	26
45	Particle physics with a laser-driven positronium atom. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2008, 659, 209-213.	4.1	25
46	High-Energy Recollision Processes of Laser-Generated Electron-Positron Pairs. <i>Physical Review Letters</i> , 2015, 114, 143201.	7.8	25
47	Muon pair creation from positronium in a linearly polarized laser field. <i>Physical Review A</i> , 2008, 78, .	2.5	24
48	Streaking at high energies with electrons and positrons. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2011, 702, 383-387.	4.1	24
49	High-energy γ -photon polarization in nonlinear Breit-Wheeler pair production and γ -polarimetry. <i>Physical Review Research</i> , 2020, 2, .	3.6	22
50	Under-the-Tunneling-Barrier Recollisions in Strong-Field Ionization. <i>Physical Review Letters</i> , 2018, 120, 013201.	7.8	21
51	High-energy, nuclear, and QED processes in strong laser fields. <i>Laser Physics</i> , 2008, 18, 175-184.	1.2	20
52	Coherent x-ray generation from below-threshold harmonics. <i>Physical Review A</i> , 2011, 84, .	2.5	20
53	Attoclip-free high-order harmonic generation. <i>Optics Express</i> , 2011, 19, 4411.	3.4	20
54	Limits of Strong Field Rescattering in the Relativistic Regime. <i>Physical Review Letters</i> , 2017, 118, 093001.	7.8	20

#	ARTICLE	IF	CITATIONS
55	Generation of twisted γ -ray radiation by nonlinear Thomson scattering of twisted light. <i>Matter and Radiation at Extremes</i> , 2019, 4, .	3.9	20
56	X-Ray Amplification by Laser Controlled Coherent Bremsstrahlung. <i>Physical Review Letters</i> , 2001, 86, 2277-2280.	7.8	19
57	Relativistic nonperturbative above-threshold phenomena in strong laser fields. <i>Laser Physics</i> , 2009, 19, 1743-1752.	1.2	19
58	Wavelength and intensity dependence of multiple forward scattering of electrons at above-threshold ionization in mid-infrared strong laser fields. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2011, 44, 095402.	1.5	19
59	Momentum partition between constituents of exotic atoms during laser-induced tunneling ionization. <i>Physical Review A</i> , 2015, 92, .	2.5	19
60	Analytical approach to Coulomb focusing in strong-field ionization. I. Nondipole effects. <i>Physical Review A</i> , 2018, 97, .	2.5	19
61	Holographic interferences in strong-field ionization beyond the dipole approximation: The influence of the peak and focal-volume-averaged laser intensities. <i>Physical Review A</i> , 2019, 100, .	2.5	19
62	Laser-driven relativistic recollisions. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2008, 25, B92.	2.1	18
63	Electron Polarimetry with Nonlinear Compton Scattering. <i>Physical Review Applied</i> , 2019, 12, .	3.8	18
64	Laser-photon merging in proton-laser collisions. <i>Physical Review A</i> , 2008, 78, .	2.5	17
65	Laser-guided relativistic quantum dynamics. <i>New Journal of Physics</i> , 2009, 11, 105045.	2.9	17
66	Phase-matched coherent hard X-rays from relativistic high-order harmonic generation. <i>Europhysics Letters</i> , 2011, 94, 14002.	2.0	17
67	Attosecond pulses at kiloelectronvolt photon energies from high-order-harmonic generation with core electrons. <i>Physical Review A</i> , 2013, 88, .	2.5	17
68	Spin-asymmetric laser-driven relativistic tunneling from $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML">\langle \text{mml:mi}>p\langle \text{mml:mi}>\langle \text{mml:math}>\text{states}$ states. <i>Physical Review A</i> , 2014, 90, .	2.5	17
69	Stochasticity in radiative polarization of ultrarelativistic electrons in an ultrastrong laser pulse. <i>Physical Review Research</i> , 2020, 2, .	3.6	17
70	Nonlinear amplification of x-ray channeling radiation. <i>Physical Review A</i> , 1997, 56, 4121-4124.	2.5	15
71	Scattering of intense laser radiation by a single-electron wave packet. <i>Physical Review A</i> , 2011, 84, .	2.5	15
72	Above-threshold ionization with highly charged ions in superstrong laser fields. III. Spin effects and their dependence on laser polarization. <i>Physical Review A</i> , 2015, 91, .	2.5	15

#	ARTICLE	IF	CITATIONS
73	Retrieving Transient Magnetic Fields of Ultrarelativistic Laser Plasma via Ejected Electron Polarization. <i>Physical Review Letters</i> , 2021, 127, 165002.	7.8	15
74	Electron spin- and photon polarization-resolved probabilities of strong-field QED processes. <i>Physical Review D</i> , 2022, 105, .	4.7	15
75	Angle-resolved stochastic photon emission in the quantum radiation-dominated regime. <i>Scientific Reports</i> , 2017, 7, 11556.	3.3	14
76	Time analysis of above-threshold ionization in extreme-ultraviolet laser pulses. <i>Physical Review A</i> , 2011, 83, .	2.5	13
77	Strong-field ionization via a high-order Coulomb-corrected strong-field approximation. <i>Physical Review A</i> , 2017, 95, .	2.5	13
78	Radiation-Reaction-Force-Induced Nonlinear Mixing of Raman Sidebands of an Ultraintense Laser Pulse in a Plasma. <i>Physical Review Letters</i> , 2013, 111, 105001.	7.8	12
79	Single-Shot Carrier-Envelope Phase Determination of Long Superintense Laser Pulses. <i>Physical Review Letters</i> , 2018, 120, 124803.	7.8	11
80	Anomalous violation of the local constant field approximation in colliding laser beams. <i>Physical Review Research</i> , 2021, 3, .	3.6	11
81	Photon polarization effects in polarized electron-positron pair production in a strong laser field. <i>Matter and Radiation at Extremes</i> , 2022, 7, .	3.9	11
82	Helicity Transfer in Strong Laser Fields via the Electron Anomalous Magnetic Moment. <i>Physical Review Letters</i> , 2022, 128, 174801.	7.8	11
83	Phase-matched high-harmonic generation from laser-driven crystals. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2002, 35, L175-L180.	1.5	10
84	Analytical approach to Coulomb focusing in strong-field ionization. II. Multiple recollisions. <i>Physical Review A</i> , 2018, 97, .	2.5	10
85	Role of high ponderomotive energy in laser-induced nonsequential double ionization. <i>Physical Review A</i> , 2019, 99, .	2.5	10
86	Many-body effects for excitonic high-order wave mixing in monolayer transition metal dichalcogenides. <i>Physical Review Research</i> , 2020, 2, .	3.6	10
87	Generation of arbitrarily polarized GeV lepton beams via nonlinear Breit-Wheeler process. <i>Fundamental Research</i> , 2022, 2, 539-545.	3.3	10
88	Multiphoton transitions for a channeled particle interacting with a strong electromagnetic wave. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1995, 206, 141-145.	2.1	9
89	Manipulating the Annihilation Dynamics of Positronium via Collective Radiation. <i>Physical Review Letters</i> , 2012, 108, 243401.	7.8	9
90	Nondipole Coulomb sub-barrier ionization dynamics and photon momentum sharing. <i>Physical Review A</i> , 2022, 105, .	2.5	9

#	ARTICLE	IF	CITATIONS
91	Subcycle time-resolved nondipole dynamics in tunneling ionization. <i>Physical Review A</i> , 2022, 105, .	2.5	8
92	Stimulated phenomena in the surface Cherenkov process by unmagnetized electron beam. <i>IEEE Journal of Quantum Electronics</i> , 1997, 33, 897-904.	1.9	7
93	Quantum theory of the nonlinear stimulated Cherenkov process. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1998, 246, 16-24.	2.1	7
94	Quantum theory of induced Cherenkov processes at exact resonance. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1998, 244, 25-30.	2.1	7
95	Lepton pair production in high-frequency laser fields. <i>Laser Physics</i> , 2009, 19, 791-796.	1.2	7
96	Macroscopic aspects of relativistic x-ray-assisted high-order-harmonic generation. <i>Physical Review A</i> , 2012, 85, .	2.5	7
97	Semiclassical limitations for photon emission in strong external fields. <i>Physical Review A</i> , 2019, 99, .	2.5	7
98	Construction of Dirac spinors for electron vortex beams in background electromagnetic fields. <i>Physical Review Research</i> , 2021, 3, .	3.6	7
99	The exact consideration of the Coulomb potential in the one-photon stimulated bremsstrahlung process. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1990, 23, 4207-4222.	1.5	6
100	Optimization of the recollision step in high-order harmonic generation. <i>Physical Review A</i> , 2012, 85, .	2.5	6
101	Ultrarelativistic electrons in counterpropagating laser beams. <i>New Journal of Physics</i> , 2021, 23, 065005.	2.9	6
102	Role of reflections in the generation of a time delay in strong-field ionization. <i>Physical Review A</i> , 2021, 104, .	2.5	6
103	Nonlinear QED in an ultrastrong rotating electric field: Signatures of the momentum-dependent effective mass. <i>Physical Review Research</i> , 2020, 2, .	3.6	6
104	Deciphering <i>in situ</i> electron dynamics of ultrarelativistic plasma via polarization pattern of emitted γ -photons. <i>Physical Review Research</i> , 2022, 4, .	3.6	6
105	The effect of energy and angular spread of an electron beam on the stimulated Coherent Bremsstrahlung gain in a crystal. <i>Optics Communications</i> , 1998, 146, 114-118.	2.1	5
106	Quantum vacuum effects in strong laser beams. <i>Plasma Physics and Controlled Fusion</i> , 2008, 50, 124035.	2.1	5
107	Electron-angular-distribution reshaping in the quantum radiation-dominated regime. <i>Physical Review A</i> , 2018, 98, .	2.5	5
108	High-energy direct photoelectron spectroscopy in strong-field ionization. <i>Physical Review A</i> , 2018, 98, .	2.5	5

#	ARTICLE	IF	CITATIONS
109	High-Brilliance Ultranarrow-Band X Rays via Electron Radiation in Colliding Laser Pulses. <i>Physical Review Letters</i> , 2022, 128, 024801.	7.8	5
110	Quasimonoeenergetic Proton Acceleration via Quantum Radiative Compression. <i>Physical Review Applied</i> , 2022, 17, .	3.8	5
111	Nondipole Time Delay and Double-Slit Interference in Tunneling Ionization. <i>Physical Review Letters</i> , 2022, 128, 183201.	7.8	5
112	Classical dynamics of stimulated bremsstrahlung in the Coulomb potential. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1986, 117, 111-114.	2.1	4
113	Superluminal Compton laser. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1989, 137, 463-465.	2.1	4
114	Nonlinear Compton scattering of strong laser radiation on channeled particles in a crystal. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2002, 299, 331-336.	2.1	4
115	Nonlinear interaction of strong laser fields in vacuum. <i>Laser Physics</i> , 2007, 17, 345-349.	1.2	4
116	Novel aspects of radiation reaction in the classical and the quantum regime. <i>Journal of Physics: Conference Series</i> , 2014, 497, 012015.	0.4	4
117	Coulomb effect in laser-induced recollision excitation. <i>Physical Review A</i> , 2018, 98, .	2.5	4
118	Imprint of the stochastic nature of photon emission by electrons on the proton energy spectra in the laser-plasma interaction. <i>Plasma Physics and Controlled Fusion</i> , 2019, 61, 084010.	2.1	4
119	Thin crystal layers in superstrong laser fields: Dynamics and coherent x-ray generation. <i>Physical Review A</i> , 2005, 72, .	2.5	3
120	PHOTON-PHOTON INTERACTION IN STRUCTURED QED VACUUM. <i>International Journal of Modern Physics Conference Series</i> , 2012, 15, 22-30.	0.7	3
121	Enhancing the high-order harmonic generation yield within a specified spectral window via electron wave-packet engineering. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2013, 30, 57.	2.1	3
122	Electron Correlation and Interference Effects in Strong-Field Processes. <i>Springer Proceedings in Physics</i> , 2012, , 209-217.	0.2	3
123	Quasiclassical propagator of a relativistic particle via the path-dependent gauge potential. <i>Physical Review A</i> , 2014, 89, .	2.5	2
124	Publisher's Note: Tunneling Dynamics in Multiphoton Ionization and Attoclock Calibration [<i>Phys. Rev. Lett.</i> 114, 083001 (2015)]. <i>Physical Review Letters</i> , 2015, 115, .	7.8	2
125	Particle beams in ultrastrong laser fields: direct laser acceleration and radiation reaction effects. <i>Journal of Physics: Conference Series</i> , 2015, 594, 012018.	0.4	2
126	Experimental Evidence for Wigner's Tunneling Time. <i>Journal of Physics: Conference Series</i> , 2018, 999, 012004.	0.4	2

#	ARTICLE	IF	CITATIONS
127	Determining the carrier-envelope phase of relativistic laser pulses via electron-momentum distribution. <i>Physical Review A</i> , 2019, 99, .	2.5	2
128	Stimulated resonant bremsstrahlung in a high-frequency electromagnetic pump field. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1996, 221, 5-13.	2.1	1
129	Nonperturbative multiphoton processes and electron-positron pair production. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	1
130	Quantum interaction among intense laser beams in vacuum. <i>European Physical Journal: Special Topics</i> , 2008, 160, 147-155.	2.6	1
131	Exotic atoms in superintense laser fields. <i>European Physical Journal: Special Topics</i> , 2009, 175, 187-190.	2.6	1
132	Computational relativistic quantum dynamics and its application to relativistic tunneling and Kapitza-Dirac scattering. , 2013, , .		1
133	Sub-barrier pathways to Freeman resonances. <i>Physical Review A</i> , 2020, 102, .	2.5	1
134	10.1007/s11490-008-3001-y. , 2010, 18, 175.		1
135	Relativistic laser-particle interaction: From single electrons to multi-particle systems. <i>AIP Conference Proceedings</i> , 2002, , .	0.4	0
136	Single and Crystalized Ions in Ultra-Intense Laser Pulses. <i>AIP Conference Proceedings</i> , 2002, , .	0.4	0
137	High-order harmonic generation from a laser-driven crystal layer. , 2004, , FTuH4.		0
138	Harmonic generation from laser-driven vacuum. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	0
139	High-energy Quantum Dynamics in Ultra-Intense Laser Pulses. <i>AIP Conference Proceedings</i> , 2007, , .	0.4	0
140	Vacuum fluctuations and nuclear quantum optics in strong laser pulses. <i>Proceedings of SPIE</i> , 2007, , .	0.8	0
141	QED vacuum effects in intense laser fields. <i>European Physical Journal: Special Topics</i> , 2009, 175, 181-185.	2.6	0
142	Dispersive nonlinearities of QED vacuum in a periodic magnetic field. <i>Proceedings of SPIE</i> , 2010, , .	0.8	0
143	QED and nuclear effects in strong optical and x-ray laser fields. <i>Proceedings of SPIE</i> , 2011, , .	0.8	0
144	Ultra-strong laser pulses: streak-camera for gamma-rays via pair production and quantum radiative reaction. <i>Proceedings of SPIE</i> , 2011, , .	0.8	0

#	ARTICLE	IF	CITATIONS
145	Streaking at high energies with electrons and positrons. , 2012, , .		0
146	Robust signatures of quantum radiation reaction with an electron beam in a focused laser pulse. , 2015, , .		0
147	Attosecond gamma-ray pulses and angle-resolved-stochastic photon emission in the quantum-radiation-dominated regime (Conference Presentation). , 2017, , .		0
148	RELATIVISTIC HIGH-ORDER HARMONIC GENERATION. , 2010, , .		0
149	Tunneling ionization in ultrashort laser pulses: Edge effect and remedy. Physical Review A, 2022, 105, .	2.5	0