

Karen Z Hatsagortsyan

List of Publications by Year in descending order

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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	Photon polarization effects in polarized electron-positron pair production in a strong laser field. Matter and Radiation at Extremes, 2022, 7, .	3.9	11
2	Generation of arbitrarily polarized GeV lepton beams via nonlinear Breit-Wheeler process. Fundamental Research, 2022, 2, 539-545.	3.3	10
3	High-Brilliance Ultranarrow-Band X Rays via Electron Radiation in Colliding Laser Pulses. Physical Review Letters, 2022, 128, 024801.	7.8	5
4	Quasimonoenergetic Proton Acceleration via Quantum Radiative Compression. Physical Review Applied, 2022, 17, .	3.8	5
5	Nondipole Coulomb sub-barrier ionization dynamics and photon momentum sharing. Physical Review A, 2022, 105, .	2.5	9
6	Deciphering <i>in situ</i> electron dynamics of ultrarelativistic plasma via polarization pattern of emitted γ -photons. Physical Review Research, 2022, 4, .	3.6	6
7	Helicity Transfer in Strong Laser Fields via the Electron Anomalous Magnetic Moment. Physical Review Letters, 2022, 128, 174801.	7.8	11
8	Subcycle time-resolved nondipole dynamics in tunneling ionization. Physical Review A, 2022, 105, .	2.5	8
9	Nondipole Time Delay and Double-Slit Interference in Tunneling Ionization. Physical Review Letters, 2022, 128, 183201.	7.8	5
10	Tunneling ionization in ultrashort laser pulses: Edge effect and remedy. Physical Review A, 2022, 105, .	2.5	0
11	Electron spin- and photon polarization-resolved probabilities of strong-field QED processes. Physical Review D, 2022, 105, .	4.7	15
12	Construction of Dirac spinors for electron vortex beams in background electromagnetic fields. Physical Review Research, 2021, 3, .	3.6	7
13	Anomalous violation of the local constant field approximation in colliding laser beams. Physical Review Research, 2021, 3, .	3.6	11
14	Ultrarelativistic electrons in counterpropagating laser beams. New Journal of Physics, 2021, 23, 065005.	2.9	6
15	Role of reflections in the generation of a time delay in strong-field ionization. Physical Review A, 2021, 104, .	2.5	6
16	Retrieving Transient Magnetic Fields of Ultrarelativistic Laser Plasma via Ejected Electron Polarization. Physical Review Letters, 2021, 127, 165002.	7.8	15
17	Ultrarelativistic polarized positron jets via collision of electron and ultraintense laser beams. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2020, 800, 135120.	4.1	43
18	Sub-barrier pathways to Freeman resonances. Physical Review A, 2020, 102, .	2.5	1

#	ARTICLE	IF	CITATIONS
19	Polarized Ultrashort Brilliant Multi-GeV γ -Rays via Single-Shot Laser-Electron Interaction. Physical Review Letters, 2020, 124, 014801.	7.8	57
20	Nonlinear QED in an ultrastrong rotating electric field: Signatures of the momentum-dependent effective mass. Physical Review Research, 2020, 2, .	3.6	6
21	Many-body effects for excitonic high-order wave mixing in monolayer transition metal dichalcogenides. Physical Review Research, 2020, 2, .	3.6	10
22	High-energy γ -photon polarization in nonlinear Breit-Wheeler pair production and γ -polarimetry. Physical Review Research, 2020, 2, .	3.6	22
23	Stochasticity in radiative polarization of ultrarelativistic electrons in an ultrastrong laser pulse. Physical Review Research, 2020, 2, .	3.6	17
24	Electron Polarimetry with Nonlinear Compton Scattering. Physical Review Applied, 2019, 12, .	3.8	18
25	Polarized Positron Beams via Intense Two-Color Laser Pulses. Physical Review Letters, 2019, 123, 174801.	7.8	65
26	Holographic interferences in strong-field ionization beyond the dipole approximation: The influence of the peak and focal-volume-averaged laser intensities. Physical Review A, 2019, 100, .	2.5	19
27	Determining the carrier-envelope phase of relativistic laser pulses via electron-momentum distribution. Physical Review A, 2019, 99, .	2.5	2
28	Imprint of the stochastic nature of photon emission by electrons on the proton energy spectra in the laser-plasma interaction. Plasma Physics and Controlled Fusion, 2019, 61, 084010.	2.1	4
29	Semiclassical limitations for photon emission in strong external fields. Physical Review A, 2019, 99, .	2.5	7
30	Ultrarelativistic Electron-Beam Polarization in Single-Shot Interaction with an Ultraintense Laser Pulse. Physical Review Letters, 2019, 122, 154801.	7.8	92
31	Generation of twisted γ -ray radiation by nonlinear Thomson scattering of twisted light. Matter and Radiation at Extremes, 2019, 4, .	3.9	20
32	Role of high ponderomotive energy in laser-induced nonsequential double ionization. Physical Review A, 2019, 99, .	2.5	10
33	Interplay between Coulomb-focusing and non-dipole effects in strong-field ionization with elliptical polarization. Journal of Physics B: Atomic, Molecular and Optical Physics, 2018, 51, 114001.	1.5	32
34	Probing the ionization wave packet and recollision dynamics with an elliptically polarized strong laser field in the nondipole regime. Physical Review A, 2018, 97, .	2.5	55
35	Under-the-Tunneling-Barrier Recollisions in Strong-Field Ionization. Physical Review Letters, 2018, 120, 013201.	7.8	21
36	Single-Shot Carrier-Envelope Phase Determination of Long Superintense Laser Pulses. Physical Review Letters, 2018, 120, 124803.	7.8	11

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37	Electron-angular-distribution reshaping in the quantum radiation-dominated regime. Physical Review A, 2018, 98, .	2.5	5
38	High-energy direct photoelectron spectroscopy in strong-field ionization. Physical Review A, 2018, 98, .	2.5	5
39	Experimental Evidence for Wigner's Tunneling Time. Journal of Physics: Conference Series, 2018, 999, 012004.	0.4	2
40	$\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \langle \text{mml:mi} \rangle \hat{I}^3 \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -Ray Beams with Large Orbital Angular Momentum via Nonlinear Compton Scattering with Radiation Reaction. Physical Review Letters, 2018, 121, 074801.	7.8	44
41	Coulomb effect in laser-induced recollision excitation. Physical Review A, 2018, 98, .	2.5	4
42	Analytical approach to Coulomb focusing in strong-field ionization. I. Nondipole effects. Physical Review A, 2018, 97, .	2.5	19
43	Analytical approach to Coulomb focusing in strong-field ionization. II. Multiple recollisions. Physical Review A, 2018, 97, .	2.5	10
44	Strong-field ionization via a high-order Coulomb-corrected strong-field approximation. Physical Review A, 2017, 95, .	2.5	13
45	Limits of Strong Field Rescattering in the Relativistic Regime. Physical Review Letters, 2017, 118, 093001.	7.8	20
46	Attosecond gamma-ray pulses and angle-resolved-stochastic photon emission in the quantum-radiation-dominated regime (Conference Presentation). , 2017, , .		0
47	Angle-resolved stochastic photon emission in the quantum radiation-dominated regime. Scientific Reports, 2017, 7, 11556.	3.3	14
48	Experimental Evidence for Quantum Tunneling Time. Physical Review Letters, 2017, 119, 023201.	7.8	152
49	Fields of an ultrashort tightly focused laser pulse. Journal of the Optical Society of America B: Optical Physics, 2016, 33, 405.	2.1	34
50	Attosecond Gamma-Ray Pulses via Nonlinear Compton Scattering in the Radiation-Dominated Regime. Physical Review Letters, 2015, 115, 204801.	7.8	41
51	Momentum partition between constituents of exotic atoms during laser-induced tunneling ionization. Physical Review A, 2015, 92, .	2.5	19
52	Publisher's Note: Tunneling Dynamics in Multiphoton Ionization and Attoclock Calibration [Phys. Rev. Lett. 114 , 083001 (2015)]. Physical Review Letters, 2015, 115, .	7.8	2
53	Particle beams in ultrastrong laser fields: direct laser acceleration and radiation reaction effects. Journal of Physics: Conference Series, 2015, 594, 012018.	0.4	2
54	Tunneling Dynamics in Multiphoton Ionization and Attoclock Calibration. Physical Review Letters, 2015, 114, 083001.	7.8	84

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55	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
56	Polarization-operator approach to pair creation in short laser pulses. <i>Physical Review D</i> , 2015, 91, .	4.7	55
57	High-Energy Recollision Processes of Laser-Generated Electron-Positron Pairs. <i>Physical Review Letters</i> , 2015, 114, 143201.	7.8	25
58	Robust signatures of quantum radiation reaction with an electron beam in a focused laser pulse. , 2015, , .		0
59	Spin-asymmetric laser-driven relativistic tunneling from $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle p \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ states. <i>Physical Review A</i> , 2014, 90, .	2.5	17
60	Robust Signatures of Quantum Radiation Reaction in Focused Ultrashort Laser Pulses. <i>Physical Review Letters</i> , 2014, 113, 044801.	7.8	33
61	Wigner time delay for tunneling ionization via the electron propagator. <i>Physical Review A</i> , 2014, 90, .	2.5	34
62	Quasiclassical propagator of a relativistic particle via the path-dependent gauge potential. <i>Physical Review A</i> , 2014, 89, .	2.5	2
63	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
64	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
65	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
66	Relativistic features and time delay of laser-induced tunnel ionization. <i>Physical Review A</i> , 2013, 88, .	2.5	58
67	Under-the-Barrier Dynamics in Laser-Induced Relativistic Tunneling. <i>Physical Review Letters</i> , 2013, 110, 153004.	7.8	88
68	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
69	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
70	Computational relativistic quantum dynamics and its application to relativistic tunneling and Kapitza-Dirac scattering. , 2013, , .		1
71	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
72	Attosecond pulses at kiloelectronvolt photon energies from high-order-harmonic generation with core electrons. <i>Physical Review A</i> , 2013, 88, .	2.5	17

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73	Streaking at high energies with electrons and positrons. , 2012, , .		0
74	Manipulating the Annihilation Dynamics of Positronium via Collective Radiation. Physical Review Letters, 2012, 108, 243401.	7.8	9
75	PHOTON-PHOTON INTERACTION IN STRUCTURED QED VACUUM. International Journal of Modern Physics Conference Series, 2012, 15, 22-30.	0.7	3
76	Coulomb focusing in above-threshold ionization in elliptically polarized midinfrared strong laser fields. Physical Review A, 2012, 85, .	2.5	35
77	Macroscopic aspects of relativistic x-ray-assisted high-order-harmonic generation. Physical Review A, 2012, 85, .	2.5	7
78	Extremely high-intensity laser interactions with fundamental quantum systems. Reviews of Modern Physics, 2012, 84, 1177-1228.	45.6	1,340
79	Frontiers of Atomic High-Harmonic Generation. Advances in Atomic, Molecular and Optical Physics, 2012, 61, 159-208.	2.3	87
80	Optimization of the recollision step in high-order harmonic generation. Physical Review A, 2012, 85, .	2.5	6
81	Electron Correlation and Interference Effects in Strong-Field Processes. Springer Proceedings in Physics, 2012, , 209-217.	0.2	3
82	Phase-matched coherent hard X-rays from relativistic high-order harmonic generation. Europhysics Letters, 2011, 94, 14002.	2.0	17
83	Coherent x-ray generation from below-threshold harmonics. Physical Review A, 2011, 84, .	2.5	20
84	Bragg Scattering of Light in Vacuum Structured by Strong Periodic Fields. Physical Review Letters, 2011, 107, 053604.	7.8	52
85	Attoclip-free high-order harmonic generation. Optics Express, 2011, 19, 4411.	3.4	20
86	Wavelength and intensity dependence of multiple forward scattering of electrons at above-threshold ionization in mid-infrared strong laser fields. Journal of Physics B: Atomic, Molecular and Optical Physics, 2011, 44, 095402.	1.5	19
87	Scattering of intense laser radiation by a single-electron wave packet. Physical Review A, 2011, 84, .	2.5	15
88	QED and nuclear effects in strong optical and x-ray laser fields. Proceedings of SPIE, 2011, , .	0.8	0
89	Streaking at high energies with electrons and positrons. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2011, 702, 383-387.	4.1	24
90	Time analysis of above-threshold ionization in extreme-ultraviolet laser pulses. Physical Review A, 2011, 83, .	2.5	13

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91	Ultra-strong laser pulses: streak-camera for gamma-rays via pair production and quantum radiative reaction. Proceedings of SPIE, 2011, , .	0.8	0
92	Dispersive nonlinearities of QED vacuum in a periodic magnetic field. Proceedings of SPIE, 2010, , .	0.8	0
93	Quantum Radiation Reaction Effects in Multiphoton Compton Scattering. Physical Review Letters, 2010, 105, 220403.	7.8	178
94	Origin of Unexpected Low Energy Structure in Photoelectron Spectra Induced by Midinfrared Strong Laser Fields. Physical Review Letters, 2010, 105, 113003.	7.8	137
95	10.1007/s11490-008-3001-y. , 2010, 18, 175.		1
96	RELATIVISTIC HIGH-ORDER HARMONIC GENERATION. , 2010, , .		0
97	Pair Production in Laser Fields Oscillating in Space and Time. Physical Review Letters, 2009, 102, 080402.	7.8	134
98	Strong Signatures of Radiation Reaction below the Radiation-Dominated Regime. Physical Review Letters, 2009, 102, 254802.	7.8	127
99	Laser-guided relativistic quantum dynamics. New Journal of Physics, 2009, 11, 105045.	2.9	17
100	QED vacuum effects in intense laser fields. European Physical Journal: Special Topics, 2009, 175, 181-185.	2.6	0
101	Exotic atoms in superintense laser fields. European Physical Journal: Special Topics, 2009, 175, 187-190.	2.6	1
102	Lepton pair production in high-frequency laser fields. Laser Physics, 2009, 19, 791-796.	1.2	7
103	Relativistic nonperturbative above-threshold phenomena in strong laser fields. Laser Physics, 2009, 19, 1743-1752.	1.2	19
104	Particle physics with a laser-driven positronium atom. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2008, 659, 209-213.	4.1	25
105	Quantum interaction among intense laser beams in vacuum. European Physical Journal: Special Topics, 2008, 160, 147-155.	2.6	1
106	High-energy, nuclear, and QED processes in strong laser fields. Laser Physics, 2008, 18, 175-184.	1.2	20
107	Nonperturbative Vacuum-Polarization Effects in Proton-Laser Collisions. Physical Review Letters, 2008, 100, 010403.	7.8	52
108	Coherent hard x rays from attosecond pulse train-assisted harmonic generation. Optics Letters, 2008, 33, 411.	3.3	29

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109	Laser-driven relativistic recollisions. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2008, 25, B92.	2.1	18
110	Muon pair creation from positronium in a linearly polarized laser field. <i>Physical Review A</i> , 2008, 78, .	2.5	24
111	Quantum vacuum effects in strong laser beams. <i>Plasma Physics and Controlled Fusion</i> , 2008, 50, 124035.	2.1	5
112	Laser-photon merging in proton-laser collisions. <i>Physical Review A</i> , 2008, 78, .	2.5	17
113	Photoemission of a Single-Electron Wave Packet in a Strong Laser Field. <i>Physical Review Letters</i> , 2008, 100, 153601.	7.8	32
114	High-energy Quantum Dynamics in Ultra-Intense Laser Pulses. <i>AIP Conference Proceedings</i> , 2007, , .	0.4	0
115	Enhancement of vacuum polarization effects in a plasma. <i>Physics of Plasmas</i> , 2007, 14, 032102.	1.9	33
116	Vacuum fluctuations and nuclear quantum optics in strong laser pulses. <i>Proceedings of SPIE</i> , 2007, , .	0.8	0
117	Fully relativistic laser-induced ionization and recollision processes. <i>Physical Review A</i> , 2007, 75, .	2.5	42
118	Nonlinear interaction of strong laser fields in vacuum. <i>Laser Physics</i> , 2007, 17, 345-349.	1.2	4
119	Muon pair creation from positronium in a circularly polarized laser field. <i>Physical Review D</i> , 2006, 74, .	4.7	34
120	Gauge-invariant relativistic strong-field approximation. <i>Physical Review A</i> , 2006, 73, .	2.5	29
121	Polarization-operator approach to electron-positron pair production in combined laser and Coulomb fields. <i>Physical Review A</i> , 2006, 73, .	2.5	57
122	Relativistic high-power laser-matter interactions. <i>Physics Reports</i> , 2006, 427, 41-155.	25.6	412
123	Microscopic laser-driven high-energy colliders. <i>Europhysics Letters</i> , 2006, 76, 29-35.	2.0	29
124	Harmonic generation from laser-driven vacuum. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	0
125	Nonperturbative multiphoton processes and electron-positron pair production. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	1
126	Light Diffraction by a Strong Standing Electromagnetic Wave. <i>Physical Review Letters</i> , 2006, 97, 083603.	7.8	139

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127	Relativistic ionization rescattering with tailored laser pulses. <i>Physical Review A</i> , 2006, 74, .	2.5	29
128	Thin crystal layers in superstrong laser fields: Dynamics and coherent x-ray generation. <i>Physical Review A</i> , 2005, 72, .	2.5	3
129	Above-threshold ionization beyond the dipole approximation. <i>Physical Review A</i> , 2005, 71, .	2.5	37
130	Harmonic generation from laser-driven vacuum. <i>Physical Review D</i> , 2005, 72, .	4.7	67
131	High-order harmonic generation from a laser-driven crystal layer. , 2004, , FTuH4.		0
132	Positronium in Intense Laser Fields. <i>Physical Review Letters</i> , 2004, 93, .	7.8	35
133	Spin and radiation in intense laser fields. <i>Physical Review A</i> , 2002, 65, .	2.5	73
134	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
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	Nonlinear Compton scattering of strong laser radiation on \hat{A} channeled particles in a crystal. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2002, 299, 331-336.	2.1	4
138	X-Ray Amplification by Laser Controlled Coherent Bremsstrahlung. <i>Physical Review Letters</i> , 2001, 86, 2277-2280.	7.8	19
139	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
140	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
141	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
142	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
143	Nonlinear amplification of x-ray channeling radiation. <i>Physical Review A</i> , 1997, 56, 4121-4124.	2.5	15
144	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

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145	Stimulated resonant bremsstrahlung in a high-frequency electromagnetic pump field. Physics Letters, Section A: General, Atomic and Solid State Physics, 1996, 221, 5-13.	2.1	1
146	Multiphoton transitions for a channeled particle interacting with a strong electromagnetic wave. Physics Letters, Section A: General, Atomic and Solid State Physics, 1995, 206, 141-145.	2.1	9
147	The exact consideration of the Coulomb potential in the one-photon stimulated bremsstrahlung process. Journal of Physics B: Atomic, Molecular and Optical Physics, 1990, 23, 4207-4222.	1.5	6
148	Superluminal Compton laser. Physics Letters, Section A: General, Atomic and Solid State Physics, 1989, 137, 463-465.	2.1	4
149	Classical dynamics of stimulated bremsstrahlung in the Coulomb potential. Physics Letters, Section A: General, Atomic and Solid State Physics, 1986, 117, 111-114.	2.1	4