

Luis Plaja

List of Publications by Year in descending order

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155
papers

4,859
citations

159585

30
h-index

95266

68
g-index

156
all docs

156
docs citations

156
times ranked

2984
citing authors

#	ARTICLE	IF	CITATIONS
1	Bright Coherent Ultrahigh Harmonics in the keV X-ray Regime from Mid-Infrared Femtosecond Lasers. Science, 2012, 336, 1287-1291.	12.6	1,537
2	Generation of extreme-ultraviolet beams with time-varying orbital angular momentum. Science, 2019, 364, .	12.6	198
3	Attosecond Extreme Ultraviolet Vortices from High-Order Harmonic Generation. Physical Review Letters, 2013, 111, 083602.	7.8	174
4	Ultraviolet surprise: Efficient soft x-ray high-harmonic generation in multiply ionized plasmas. Science, 2015, 350, 1225-1231.	12.6	165
5	Transferring orbital and spin angular momenta of light to atoms. New Journal of Physics, 2010, 12, 083053.	2.9	140
6	Polarization control of isolated high-harmonic pulses. Nature Photonics, 2018, 12, 349-354.	31.4	136
7	Zeptosecond High Harmonic keV X-Ray Waveforms Driven by Midinfrared Laser Pulses. Physical Review Letters, 2013, 111, 033002.	7.8	123
8	Controlling the polarization and vortex charge of attosecond high-harmonic beams via simultaneous spin-orbit momentum conservation. Nature Photonics, 2019, 13, 123-130.	31.4	120
9	Generation of bright isolated attosecond soft X-ray pulses driven by multicycle midinfrared lasers. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, E2361-7.	7.1	116
10	Nonperturbative Twist in the Generation of Extreme-Ultraviolet Vortex Beams. Physical Review Letters, 2016, 117, 163202.	7.8	112
11	Photoionization with orbital angular momentum beams. Optics Express, 2010, 18, 3660.	3.4	103
12	Tomographic reconstruction of circularly polarized high-harmonic fields: 3D attosecond metrology. Science Advances, 2016, 2, e1501333.	10.3	103
13	Ab Initio Calculation of the Double Ionization of Helium in a Few-Cycle Laser Pulse Beyond the One-Dimensional Approximation. Physical Review Letters, 2006, 96, 053001.	7.8	92
14	High-order harmonic propagation in gases within the discrete dipole approximation. Physical Review A, 2010, 82, .	2.5	89
15	Ultrahigh harmonic generation from diatomic molecular ions in highly excited vibrational states. Physical Review A, 1997, 55, R1593-R1596.	2.5	85
16	Total ionization rates and ion yields of atoms at nonperturbative laser intensities. Physical Review A, 2001, 64, .	2.5	76
17	Harmonic generation beyond the Strong-Field Approximation: the physics behind the short-wave-infrared scaling laws. Optics Express, 2009, 17, 9891.	3.4	72
18	Generation of attosecond pulse trains during the reflection of a very intense laser on a solid surface. Journal of the Optical Society of America B: Optical Physics, 1998, 15, 1904.	2.1	64

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19	Quantum-path signatures in attosecond helical beams driven by optical vortices. <i>New Journal of Physics</i> , 2015, 17, 093029.	2.9	55
20	Adiabatic theory for high-order harmonic generation in a two-level atom. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1992, 9, 2210.	2.1	51
21	Lithium Ionization by a Strong Laser Field. <i>Physical Review Letters</i> , 2005, 94, 063002.	7.8	50
22	High-order harmonic generation in a crystalline solid. <i>Physical Review B</i> , 1992, 45, 8334-8341.	3.2	48
23	High-order Harmonic Generation in a Two-level Atom. <i>Journal of Modern Optics</i> , 1993, 40, 793-807.	1.3	48
24	Generation and Applications of Extreme-Ultraviolet Vortices. <i>Photonics</i> , 2017, 4, 28.	2.0	41
25	Nonsequential double ionization of the hydrogen molecule in a few-cycle laser pulse. <i>Physical Review A</i> , 2006, 74, .	2.5	37
26	Conservation of Torus-knot Angular Momentum in High-order Harmonic Generation. <i>Physical Review Letters</i> , 2019, 122, 203201.	7.8	37
27	High-Order Harmonic Generation by Electron-Proton Recombination. <i>Europhysics Letters</i> , 1994, 28, 629-633.	2.0	35
28	Theory of high-order harmonic generation for gapless graphene. <i>New Journal of Physics</i> , 2018, 20, 053033.	2.9	35
29	Optical anisotropy of non-perturbative high-order harmonic generation in gapless graphene. <i>Optics Express</i> , 2019, 27, 7776.	3.4	35
30	Influence of barrier suppression in high-order harmonic generation. <i>Physical Review A</i> , 1995, 51, 4746-4753.	2.5	33
31	Signature of the transversal coherence length in high-order harmonic generation. <i>Physical Review A</i> , 2013, 88, .	2.5	30
32	Observation of Spontaneous Self-Channeling of Light in Air below the Collapse Threshold. <i>Physical Review Letters</i> , 2005, 95, 053905.	7.8	27
33	Nonsequential double ionization of the hydrogen molecule: Dependence on molecular alignment. <i>Physical Review A</i> , 2008, 78, .	2.5	27
34	High-order harmonic generation in a partially ionized medium. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1996, 13, 430.	2.1	25
35	Extreme-ultraviolet vector-vortex beams from high harmonic generation. <i>Optica</i> , 2022, 9, 71.	9.3	25
36	A complete description of the spin force. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2004, 37, 435-444.	1.5	24

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37	Isolated broadband attosecond pulse generation with near- and mid-infrared driver pulses via time-gated phase matching. <i>Optics Express</i> , 2017, 25, 11855.	3.4	24
38	Relativistic quantum dynamics of a localized Dirac electron driven by an intense-laser-field pulse. <i>Physical Review A</i> , 2001, 64, .	2.5	23
39	High-order harmonic generation after photodissociation. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1998, 31, 4163-4172.	1.5	22
40	Harmonic generation beyond the Strong-Field Approximation: Phase and temporal description. <i>Laser Physics</i> , 2010, 20, 1044-1050.	1.2	22
41	High power vortex generation with volume phase holograms and non-linear experiments in gases. <i>Applied Physics B: Lasers and Optics</i> , 2008, 91, 115-118.	2.2	21
42	Extension of the cut-off in high-harmonic generation using two delayed pulses of the same colour. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2009, 42, 134004.	1.5	21
43	Group velocity matching in high-order harmonic generation driven by mid-infrared lasers. <i>New Journal of Physics</i> , 2016, 18, 073031.	2.9	21
44	Photoionization of the hydrogen atom: Three-dimensional results and pseudo-one-dimensional model. <i>Physical Review A</i> , 1991, 44, 4652-4659.	2.5	20
45	Analytical description of a plasma diffraction grating induced by two crossed laser beams. <i>Physical Review E</i> , 1997, 56, 7142-7146.	2.1	19
46	Harmonic generation with ionizing two-level atoms. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1998, 31, 1687-1694.	1.5	17
47	Quantum and semiclassical simulations in intense laser-H ₂ ⁺ interactions. <i>Physical Review A</i> , 2006, 73, .	2.5	17
48	Off-axis compensation of attosecond pulse chirp. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2012, 45, 074021.	1.5	16
49	Ultraintense Femtosecond Magnetic Nanoprobes Induced by Azimuthally Polarized Laser Beams. <i>ACS Photonics</i> , 2019, 6, 38-42.	6.6	16
50	Necklace-structured high-harmonic generation for low-divergence, soft x-ray harmonic combs with tunable line spacing. <i>Science Advances</i> , 2022, 8, eabj7380.	10.3	16
51	Quantum description of the high-order harmonic generation in multiphoton and tunneling regimes. <i>Physical Review A</i> , 2007, 76, .	2.5	15
52	A quantitative S-Matrix approach to high-order harmonic generation from multiphoton to tunneling regimes.. <i>Optics Express</i> , 2007, 15, 3629.	3.4	15
53	Effect of time-dependent ionization on the harmonics generated by boundâ€“bound transitions. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1996, 13, 2724.	2.1	14
54	Carrier-envelope-phase insensitivity in high-order harmonic generation driven by few-cycle laser pulses. <i>Optics Express</i> , 2015, 23, 21497.	3.4	13

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55	Attosecond twisted beams from high-order harmonic generation driven by optical vortices. High Power Laser Science and Engineering, 2017, 5, .	4.6	13
56	Photoionization of two-electronortho-atoms. Physical Review A, 2003, 68, .	2.5	12
57	Continuous spectra in high-harmonic generation driven by multicycle laser pulses. Physical Review A, 2016, 93, .	2.5	12
58	Tunable high-harmonic generation by chromatic focusing of few-cycle laser pulses. Physical Review A, 2017, 95, .	2.5	12
59	Beyond the moving mirror model: Attosecond pulses from a relativistically moving plasma. Laser and Particle Beams, 2000, 18, 467-475.	1.0	11
60	Expansion of a Bose-Einstein condensate in an atomic waveguide. Physical Review A, 2002, 65, .	2.5	11
61	Dipole spectrum structure of nonresonant nonperturbative driven two-level atoms. Physical Review A, 2010, 81, .	2.5	11
62	Valley in the efficiency of the high-order harmonic yield at ultra-high laser intensities. Optics Express, 2011, 19, 19430.	3.4	11
63	Resolving multiple rescatterings in high-order-harmonic generation. Physical Review A, 2016, 93, .	2.5	11
64	Characterization of Extreme Ultraviolet Vortex Beams with a Very High Topological Charge. ACS Photonics, 2022, 9, 944-951.	6.6	11
65	Attosecond x-ray transient absorption spectroscopy in graphene. Physical Review Research, 2021, 3, .	3.6	10
66	The Zitterbewegung for a Dirac electron driven by an intense laser field. Journal of Physics B: Atomic, Molecular and Optical Physics, 2003, 36, 2253-2266.	1.5	9
67	Non-linear Young's double-slit experiment. Optics Express, 2006, 14, 2817.	3.4	9
68	Single and double ionization of the hydrogen molecule in an intense few-cycle laser pulse. Laser Physics, 2007, 17, 358-367.	1.2	9
69	Spatial contributions of electron trajectories to high-order-harmonic radiation originating from a semi-infinite gas cell. Physical Review A, 2013, 88, .	2.5	9
70	Trains of attosecond pulses structured with time-ordered polarization states. Optics Letters, 2020, 45, 5636.	3.3	9
71	Prediction of step-like occupation and inversion of states in thin films exposed to laser pulses. Journal of Physics B: Atomic, Molecular and Optical Physics, 2002, 35, L181-L186.	1.5	8
72	Phase matching effects in high harmonic generation at the nanometer scale. Optics Express, 2017, 25, 14974.	3.4	8

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73	Entanglement of unstable atoms: modifications of the emission properties. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 165008.	1.5	7
74	Invalidity of the Ehrenfest theorem in the computation of high-order-harmonic generation within the strong-field approximation. Physical Review A, 2012, 85, .	2.5	7
75	High harmonic generation in armchair carbon nanotubes. Optics Express, 2020, 28, 19760.	3.4	7
76	Spectral signature of back reaction in correlated electron dynamics in intense electromagnetic fields. Physical Review Research, 2020, 2, .	3.6	7
77	Stopped atomic wavepackets generated by interaction with a square-profile laser beam. Quantum and Semiclassical Optics: Journal of the European Optical Society Part B, 1996, 8, 673-686.	0.9	6
78	Harmonic filtering in an optically thin laser-generated plasma. Physical Review E, 1998, 58, 7864-7867.	2.1	6
79	Steady magnetic field generation due to transient field ionization in ultrashort laser-solid interaction. Physical Review E, 1999, 59, R36-R39.	2.1	6
80	Light Scattering by a Relativistic Plasma Driven by an Ultraintense Laser Source. Astrophysical Journal, Supplement Series, 2000, 127, 445-449.	7.7	6
81	Plasmon-induced photon emission from thin metal films. Journal of Physics B: Atomic, Molecular and Optical Physics, 2000, 33, 1653-1661.	1.5	6
82	Ionization of lithium in a strong laser field. Laser Physics, 2006, 16, 600-606.	1.2	6
83	S-Matrix theory for the high-order harmonic generation beyond the Strong-Field Approximation. Laser Physics, 2009, 19, 1581-1585.	1.2	6
84	Comment on "Effect of entanglement on the decay dynamics of a pair of H(2p) atoms due to spontaneous emission". Physical Review A, 2011, 83, .	2.5	6
85	Auger-induced charge migration. Physical Review A, 2018, 98, .	2.5	6
86	Realization of Polarization Control in High-Order Harmonic Generation. IEEE Journal of Selected Topics in Quantum Electronics, 2019, 25, 1-12.	2.9	6
87	Ultrafast sub-nanometer matter-wave temporal Talbot effect. New Journal of Physics, 2021, 23, 093011.	2.9	6
88	Controlling the polarization and vortex charge of attosecond high-harmonic beams via simultaneous spin-orbit momentum conservation. Nature Photonics, 2018, 13, .	31.4	6
89	Dynamics of the formation of bright solitary waves of Bose-Einstein condensates in optical lattices. Physical Review A, 2004, 69, .	2.5	5
90	Strong-field short-pulse ionization of the molecular hydrogen ion. Laser Physics Letters, 2004, 1, 25-31.	1.4	5

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91	Transverse phase matching of high-order harmonic generation in single-layer graphene. Optics Express, 2021, 29, 2488.	3.4	5
92	Quantum description of charge fluctuations in electron gas and plasma wave response to intense laser interaction. Journal of Physics B: Atomic, Molecular and Optical Physics, 1998, 31, 5215-5220.	1.5	4
93	Probe-field reflection on a plasma surface driven by a strong electromagnetic field. Journal of Physics B: Atomic, Molecular and Optical Physics, 2000, 33, 2549-2558.	1.5	4
94	Influence of Pauli exclusion principle on the strong field ionization of two electron atoms. Applied Physics B: Lasers and Optics, 2004, 78, 829-833.	2.2	4
95	Metastable superpositions of ortho- and para-Helium states. Physics Letters, Section A: General, Atomic and Solid State Physics, 2008, 372, 5560-5563.	2.1	4
96	Ultrahigh-Efficiency High Harmonic Generation Driven by UV Lasers. , 2013, , .		4
97	Introduction of the LiÅ©nard-Wiechert correction to the particle simulation of relativistic plasmas. Physical Review E, 1998, 58, 3977-3983.	2.1	3
98	Propagation of terawatt laser pulses in the air. Applied Physics A: Materials Science and Processing, 2008, 92, 865-871.	2.3	3
99	Bright Circularly Polarized Soft X-Ray High Harmonics for X-Ray Magnetic Circular Dichroism. , 2015, , .		3
100	Non-classical high harmonic generation in graphene driven by linearly-polarized laser pulses. Optics Express, 2022, 30, 15546.	3.4	3
101	Generation of trains of attosecond pulses from a photodissociated molecule. Journal of Physics B: Atomic, Molecular and Optical Physics, 1999, 32, 3547-3553.	1.5	2
102	Harmonic generation during the ionization of a thin target irradiated by a strong laser field. Journal of the Optical Society of America B: Optical Physics, 1999, 16, 407.	2.1	2
103	Sub-half-cycle polarization gates in ultra-short laser pulses induced by non-linear propagation effects. Applied Physics B: Lasers and Optics, 2007, 88, 5-11.	2.2	2
104	Comment on "On the dipole, velocity and acceleration forms in high-order harmonic generation from a single atom or molecule". Journal of Physics B: Atomic, Molecular and Optical Physics, 2012, 45, 028001.	1.5	2
105	Space-time description of strong-field ionization and high-order-harmonic generation. Physical Review A, 2014, 89, .	2.5	2
106	Ultrashort Extreme Ultraviolet Vortices. , 0, , .		2
107	Site-specific tunnel-ionization in high harmonic generation in molecules. New Journal of Physics, 2020, 22, 043012.	2.9	2
108	Stopped reflection of an atomic wavepacket by a laser beam with an evanescent profile. Optics Communications, 1998, 148, 376-382.	2.1	1

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109	Characterization of the channeling process in the scattering of relativistic electrons with periodic structures. <i>Physical Review A</i> , 2002, 65, .	2.5	1
110	Strong-field approximation to the relativistic channeling of electrons in the presence of electromagnetic waves. <i>Physical Review A</i> , 2002, 65, .	2.5	1
111	<title>Observation of channels of radiation during the propagation in air of short pulses below the collapse threshold</title>. , 2006, 6256, 61.		1
112	Nonlinear effects in the propagation of short laser pulses in air. , 2007, , .		1
113	Bright Isolated Attosecond Soft X-Ray Pulses. <i>Springer Proceedings in Physics</i> , 2015, , 95-98.	0.2	1
114	Extreme-Ultraviolet Vortices of very high Topological Charge. , 2021, , .		1
115	Attosecond Extreme Ultraviolet Beams with Time-Varying Orbital Angular Momentum: The Self-Torque of Light. , 2019, , .		1
116	Coupling effects in the propagation of harmonics. <i>Journal of Modern Optics</i> , 1996, 43, 1939-1950.	1.3	0
117	Multiple reflection of an extended atomic wave packet through a square-profile laser beam. <i>Physical Review A</i> , 1996, 53, 4260-4267.	2.5	0
118	Generation of a train of attosecond pulses in the reflected field from a laser-plasma interaction. , 1998, , .		0
119	Study of a plasma diffraction grating induced by super strong crossed laser beams. , 1998, , .		0
120	Attosecond pulse trains and relativistically driven plasmas. <i>AIP Conference Proceedings</i> , 2000, , .	0.4	0
121	Microwave-induced control of free-electron-laser radiation. <i>Physical Review E</i> , 2001, 64, 026505.	2.1	0
122	Influence of the laser pulse phase on the interaction of an ultrashort laser pulse with a dense target. <i>Laser Physics Letters</i> , 2005, 2, 178-183.	1.4	0
123	<title>Influence of Pauli's exclusion principle in the multiple ionization of atoms by strong laser fields</title>. , 2006, , .		0
124	<title>Mechanisms of formation of gap solitons of Bose-Einstein condensates in optical lattices</title>. , 2006, , .		0
125	Generating vector solitary waves of Bose-Einstein Condensates in optical lattices. <i>Laser Physics</i> , 2006, 16, 344-347.	1.2	0
126	Time domain effects during spontaneous self-channelling of light in air below the collapse threshold. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2007, 40, 4433-4442.	1.5	0

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127	Few-body dynamics in ultrashort laser pulses. Journal of Physics: Conference Series, 2007, 88, 012045.	0.4	0
128	A quantitative-accurate S-matrix model for the description high-order harmonic generation. European Physical Journal: Special Topics, 2009, 175, 21-24.	2.6	0
129	Temporal structure of ultra high-order harmonic generation in the keV regime driven by mid-infrared lasers. , 2012, , .		0
130	Tailoring isolated attosecond pulses using quantum path interferences. Journal of Physics: Conference Series, 2013, 414, 012014.	0.4	0
131	Frontiers in extreme nonlinear optics: Attosecond-to-zeptosecond coherent kiloelectronvolt X-rays on a tabletop. , 2013, , .		0
132	Bright High Order Harmonic Generation in a Multiply Ionized Plasma up to the Water Window. , 2014, , .		0
133	Coherent Attosecond Beams Carrying Orbital Angular Momentum. , 2014, , .		0
134	Circularly Polarized Soft X-Ray High Harmonics and XMCD on a Tabletop. , 2015, , .		0
135	High harmonic generation in graphene: temporal and spectral properties. , 2017, , .		0
136	Non-perturbative twist of attosecond extreme-ultraviolet vortex beams. , 2017, , .		0
137	Tunable orbital angular momentum beams in the extreme ultraviolet/soft x-ray regimes. Proceedings of SPIE, 2017, , .	0.8	0
138	High harmonic generation by resonant nano-antennas: Phase matching at the nanometer scale. , 2017, , .		0
139	Harnessing the orbital angular momentum of attosecond vortices through the nonperturbative nature of high harmonic generation. , 2017, , .		0
140	High order harmonic generation in graphene. , 2017, , .		0
141	EUV light beams with fractional orbital angular momentum driven by high-order harmonic generation and conical refraction. , 2017, , .		0
142	Extreme-Ultraviolet Pulses with Self-Torque. , 2019, , .		0
143	Necklace High Harmonic Generation for Low-Divergence, Soft X-Ray Harmonic Combs with Tunable Line Spacing. , 2021, , .		0
144	Low-Divergence, Soft X-Ray Harmonic Combs with Tunable Line Spacing from Necklace-Structured Driving Lasers. , 2021, , .		0

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145	Attosecond Pulse Trains with Time-Dependent Spin Angular Momentum. , 2021, , .		0
146	Macroscopic Signatures of the Non-Perturbative Response of Single Layer Graphene to Intense Laser Fields. , 2021, , .		0
147	Light Spin-Orbit Coupling in High-Order Harmonic Generation via Graphene's Band Anisotropy. , 2021, , .		0
148	Coherent Attosecond Extreme Ultraviolet Vortices from High-Order Harmonic Generation. , 2014, , .		0
149	Nonperturbative Orbital Angular Momentum Buildup of Extreme-Ultraviolet Vortex Beams. , 2017, , .		0
150	Attosecond, High-Harmonic Optical Vortices with Tailored Spin and Orbital Angular Momentum. , 2019, , .		0
151	Helicity in a Twist: Attosecond, Extreme Ultraviolet Vortex Beams with Designer Spin and Orbital Angular Momenta. , 2019, , .		0
152	Multielectron trace of back reaction in high-harmonic generation. , 2020, , .		0
153	High-Harmonic Dipole Response Characterized by Ellipsometry. , 2020, , .		0
154	Structuring Harmonic Vector-Vortex Beams in the Extreme Ultraviolet. , 2021, , .		0
155	High topological charge extreme-ultraviolet vortex and vector-vortex beams. , 2022, , .		0