Gianluca Sarri

List of Publications by Year
in descending order

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119 papers	3,295 citations	201674 27 h-index	155660 55 g-index
145 all docs	145 docs citations	145 times ranked	2282 citing authors

#	Article	IF	Citations
1	Generation of neutral and high-density electronâ€“positron pair plasmas in the laboratory. Nature Communications, 2015, 6, 6747.	12.8	252
2	Ion Acceleration in Multispecies Targets Driven by Intense Laser Radiation Pressure. Physical Review Letters, 2012, 109, 185006.	7.8	243
3	Ultrahigh Brilliance Multi-MeV<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î³</mml:mi></mml:math>-Ray Beams from Nonlinear Relativistic Thomson Scattering. Physical Review Letters, 2014, 113, 224801.	7.8	239
4	Experimental Evidence of Radiation Reaction in the Collision of a High-Intensity Laser Pulse with a Laser-Wakefield Accelerated Electron Beam. Physical Review X, 2018, 8, .	8.9	234
5	Experimental Signatures of the Quantum Nature of Radiation Reaction in the Field of an Ultraintense Laser. Physical Review X, 2018, 8, .	8.9	210
6	Table-Top Laser-Based Source of Femtosecond, Collimated, Ultrarelativistic Positron Beams. Physical Review Letters, 2013, 110, 255002.	7.8	149
7	Hot Electrons Transverse Refluxing in Ultraintense Laser-Solid Interactions. Physical Review Letters, 2010, 105, 015005.	7.8	97
8	Intense<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î³</mml:mi></mml:math>-Ray Source in the Giant-Dipole-Resonance Range Driven by 10-TW Laser Pulses. Physical Review Letters, 2008, 101, 105002.	7.8	94
9	Conceptual design report for the LUXE experiment. European Physical Journal: Special Topics, 2021, 230, 2445-2560.	2.6	89
10	Laser-Driven Ultrafast Field Propagation on Solid Surfaces. Physical Review Letters, 2009, 102, 194801.	7.8	87
11	Enhancement of wear and corrosion resistance of beta titanium alloy by laser gas alloying with nitrogen. Applied Surface Science, 2016, 367, 80-90.	6.1	80
12	Electrostatic shock dynamics in superthermal plasmas. Physics of Plasmas, 2012, 19, .	1.9	79
13	Dynamics of Self-Generated, Large Amplitude Magnetic Fields Following High-Intensity Laser Matter Interaction. Physical Review Letters, 2012, 109, 205002.	7.8	70
14	EuPRAXIA Conceptual Design Report. European Physical Journal: Special Topics, 2020, 229, 3675-4284.	2.6	64
15	Time-Resolved Characterization of the Formation of a Collisionless Shock. Physical Review Letters, 2013, 110, 205001.	7.8	54
16	Weibel-Induced Filamentation during an Ultrafast Laser-Driven Plasma Expansion. Physical Review Letters, 2012, 108, 135001.	7.8	51
17	High-resolution Î¼CT of a mouse embryo using a compact laser-driven X-ray betatron source. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 6335-6340.	7.1	50
18	Observation of Postsoliton Expansion Following Laser Propagation through an Underdense Plasma. Physical Review Letters, 2010, 105, 175007.	7.8	45

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19	Experimental Observation of a Current-Driven Instability in a Neutral Electron-Positron Beam. Physical Review Letters, 2017, 119, 185002.	7.8	44
20	Observation and characterization of laser-driven phase space electron holes. Physics of Plasmas, 2010, 17, 010701.	1.9	43
21	The application of laser-driven proton beams to the radiography of intense laserâ€“hohlraum interactions. New Journal of Physics, 2010, 12, 045006.	2.9	38
22	Shock creation and particle acceleration driven by plasma expansion into a rarefied medium. Physics of Plasmas, 2010, 17, 082305.	1.9	35
23	Generation of a Purely Electrostatic Collisionless Shock during the Expansion of a Dense Plasma through a Rarefied Medium. Physical Review Letters, 2011, 107, 025003.	7.8	35
24	Laser-driven generation of collimated ultra-relativistic positron beams. Plasma Physics and Controlled Fusion, 2013, 55, 124017.	2.1	33
25	The TARANIS laser: A multi-Terawatt system for laser-plasma investigations. Laser and Particle Beams, 2010, 28, 451-461.	1.0	31
26	Measurements of high-energy radiation generation from laser-wakefield accelerated electron beams. Physics of Plasmas, 2014, 21, .	1.9	31
27	Nanoscale Hybrid Coating Enables Multifunctional Tissue Scaffold for Potential Multimodal Therapeutic Applications. ACS Applied Materials & Interfaces, 2019, 11, 27269-27278.	8.0	30
28	Effect of self-generated magnetic fields on fast-electron beam divergence in solid targets. New Journal of Physics, 2010, 12, 063018.	2.9	29
29	Design of a compact spectrometer for high-flux MeV gamma-ray beams. Review of Scientific Instruments, 2014, 85, 065119.	1.3	27
30	Calibration of BAS-TR image plate response to high energy (3-300 MeV) carbon ions. Review of Scientific Instruments, 2015, 86, 123302.	1.3	27
31	Overview of laser-driven generation of electronâ€“positron beams. Journal of Plasma Physics, 2015, 81, .	2.1	26
32	Quantum electrodynamics experiments with colliding petawatt laser pulses. High Power Laser Science and Engineering, 2019, 7, .	4.6	26
33	Progress in proton radiography for diagnosis of ICF-relevant plasmas. Laser and Particle Beams, 2010, 28, 277-284.	1.0	25
34	Two-dimensional particle-in-cell simulation of the expansion of a plasma into a rarefied medium. New Journal of Physics, 2011, 13, 073023.	2.9	25
35	MeV negative ion generation from ultra-intense laser interaction with a water spray. Applied Physics Letters, 2011, 99, .	3.3	23
36	Creation of persistent, straight, 2 mm long laser driven channels in underdense plasmas. Physics of Plasmas, 2010, 17, .	1.9	22

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37	Demonstration of laser pulse amplification by stimulated Brillouin scattering. High Power Laser Science and Engineering, 2014, 2, .	4.6	21
38	A spectrometer for ultrashort gamma-ray pulses with photon energies greater than 10 MeV. Review of Scientific Instruments, 2018, 89, 113303.	1.3	21
39	Simulation of a collisionless planar electrostatic shock in a protonâ€“electron plasma with a strong initial thermal pressure change. Plasma Physics and Controlled Fusion, 2010, 52, 025001.	2.1	20
40	Laser-driven high-quality positron sources as possible injectors for plasma-based accelerators. Scientific Reports, 2019, 9, 5279.	3.3	20
41	Parametric study of non-relativistic electrostatic shocks and the structure of their transition layer. Physics of Plasmas, 2013, 20, .	1.9	19
42	Observation of plasma density dependence of electromagnetic soliton excitation by an intense laser pulse. Physics of Plasmas, 2011, 18, 080704.	1.9	18
43	Conditions for the onset of the current filamentation instability in the laboratory. Journal of Plasma Physics, 2018, 84, .	2.1	17
44	Evolution of slow electrostatic shock into a plasma shock mediated by electrostatic turbulence. New Journal of Physics, 2014, 16, 073001.	2.9	15
45	Spectral and spatial characterisation of laser-driven positron beams. Plasma Physics and Controlled Fusion, 2017, 59, 014015.	2.1	15
46	Spatially Resolved Measurements of Laser Filamentation in Long Scale Length Underdense Plasmas with and without Beam Smoothing. Physical Review Letters, 2011, 106, 095001.	7.8	13
47	Modification of the formation of high-Mach number electrostatic shock-like structures by the ion acoustic instability. Physics of Plasmas, 2013, 20, .	1.9	13
48	Fast-electron refluxing effects on anisotropic hard-x-ray emission from intense laser-plasma interactions. Physical Review E, 2015, 91, 033107.	2.1	13
49	On the investigation of fast electron beam filamentation in laser-irradiated solid targets using multi-MeV proton emission. Plasma Physics and Controlled Fusion, 2011, 53, 124012.	2.1	12
50	Simulation of relativistically colliding laser-generated electron flows. Physics of Plasmas, 2012, 19, .	1.9	12
51	Optical measurement of the temporal delay between two ultra-short and focussed laser pluses. Optics Express, 2016, 24, 3127.	3.4	12
52	Particle simulation study of electron heating by counter-streaming ion beams ahead of supernova remnant shocks. Plasma Physics and Controlled Fusion, 2012, 54, 085015.	2.1	11
53	Radiation reaction studies in an all-optical set-up: experimental limitations. Journal of Modern Optics, 2018, 65, 1362-1369.	1.3	11
54	Laser-Wakefield Electron Beams as Drivers of High-Quality Positron Beams and Inverse-Compton-Scattered Photon Beams. Frontiers in Physics, 2019, 7, .	2.1	11

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55	Conceptual Design of a High-flux Multi-GeV Gamma-ray Spectrometer. Scientific Reports, 2020, 10, 9894.	3.3	11
56	A laserâ€“plasma platform for photonâ€“photon physics: the two photon Breitâ€“Wheeler process. New Journal of Physics, 2021, 23, 115006.	2.9	11
57	Complementary ion and extreme ultra-violet spectrometer for laser-plasma diagnosis. Review of Scientific Instruments, 2009, 80, 103302.	1.3	10
58	Application of proton radiography in experiments of relevance to inertial confinement fusion. European Physical Journal D, 2009, 55, 299-303.	1.3	10
59	Expansion of a radially symmetric blast shell into a uniformly magnetized plasma. Physics of Plasmas, 2018, 25, .	1.9	10
60	One-dimensional thermal pressure-driven expansion of a pair cloud into an electron-proton plasma. Physics of Plasmas, 2018, 25, .	1.9	10
61	Production of photoionized plasmas in the laboratory with x-ray line radiation. Physical Review E, 2018, 97, 063203.	2.1	10
62	Ultrashort, MeV-scale laser-plasma positron source for positron annihilation lifetime spectroscopy. Physical Review Accelerators and Beams, 2021, 24, .	1.6	10
63	Dynamics of intense laser propagation in underdense plasma: Polarization dependence. Physics of Plasmas, 2012, 19, .	1.9	9
64	Experimental investigation of hole boring and light sail regimes of RPA by varying laser and target parameters. Plasma Physics and Controlled Fusion, 2013, 55, 124030.	2.1	9
65	IRIDE: Interdisciplinary research infrastructure based on dual electron linacs and lasers. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 740, 138-146.	1.6	9
66	Thin-shell instability in collisionless plasma. Physical Review E, 2015, 92, 031101.	2.1	9
67	A high-energy, high-flux source of gamma-rays from all-optical non-linear Thomson scattering. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 829, 291-300.	1.6	9
68	Observation of the transient charging of a laser-irradiated solid. European Physical Journal D, 2009, 55, 293-297.	1.3	8
69	Magnetic instability in a dilute circular rarefaction wave. Physics of Plasmas, 2012, 19, 122102.	1.9	8
70	Particle-in-cell simulation study of a lower-hybrid shock. Physics of Plasmas, 2016, 23, .	1.9	8
71	Experimental Observation of Thin-shell Instability in a Collisionless Plasma. Astrophysical Journal Letters, 2017, 834, L21.	8.3	8
72	Magnetic field generation during intense laser channelling in underdense plasma. Physics of Plasmas, 2016, 23, 063121.	1.9	7

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73	Measurements of self-guiding of ultrashort laser pulses over long distances. Plasma Physics and Controlled Fusion, 2018, 60, 014022.	2.1	7
74	Electrostatic shock waves in the laboratory and astrophysics: similarities and differences. Plasma Physics and Controlled Fusion, 2018, 60, 014014.	2.1	7
75	Expansion of a mildly relativistic hot pair cloud into an electron-proton plasma. Physics of Plasmas, 2018, 25, .	1.9	7
76	EuPRAXIA â€“ a compact, cost-efficient particle and radiation source. AIP Conference Proceedings, 2019, , .	0.4	7
77	Single particle detection system for strong-field QED experiments. New Journal of Physics, 2022, 24, 015002.	2.9	7
78	PIC simulation of a thermal anisotropy-driven Weibel instability in a circular rarefaction wave. New Journal of Physics, 2012, 14, 023007.	2.9	6
79	Cocoon formation by a mildly relativistic pair jet in unmagnetized collisionless electron-proton plasma. Physics of Plasmas, 2018, 25, .	1.9	6
80	Non-invasive characterisation of a laser-driven positron beam. Plasma Physics and Controlled Fusion, 2020, 62, 055013.	2.1	6
81	Modified proton radiography arrangement for the detection of ultrafast field fronts. Review of Scientific Instruments, 2009, 80, 113506.	1.3	5
82	Making pions with laser light. New Journal of Physics, 2018, 20, 073008.	2.9	5
83	Generation of high contrast and high spatial quality idler from a low-gain optical parametric amplifier. Applied Optics, 2016, 55, 9341.	2.1	5
84	Ion source development and radiobiology applications within the LIBRA project. , 2011, , .		4
85	General features of experiments on the dynamics of laser-driven electronâ€“positron beams. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 909, 95-101.	1.6	4
86	Effect of precursor pH on AuNP/MWCNT nanocomposites synthesized by plasma-induced non-equilibrium electrochemistry. Journal Physics D: Applied Physics, 2020, 53, 425207.	2.8	4
87	Plasma-based positron sources at EuPRAXIA. Plasma Physics and Controlled Fusion, 2022, 64, 044001.	2.1	4
88	Laser-driven generation of high-quality ultra-relativistic positron beams. Journal of Plasma Physics, 2015, 81, .	2.1	3
89	The effect of a negatively chirped laser pulse on the evolution of bubble structure in nonlinear bubble regime. Physics of Plasmas, 2016, 23, 123113.	1.9	3
90	The effect of positively chirped laser pulse on energy enhancement of proton acceleration in combinational radiation pressure and bubble regime. Physics of Plasmas, 2017, 24, .	1.9	3

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91	Expansion of a radial plasma blast shell into an ambient plasma. Physics of Plasmas, 2017, 24, .	1.9	3
92	Particle-in-cell simulation study of the interaction between a relativistically moving leptonic micro-cloud and ambient electrons. Astronomy and Astrophysics, 2015, 577, A137.	5.1	3
93	High-dose femtosecond-scale gamma-ray beams for radiobiological applications. Physics in Medicine and Biology, 2022, 67, 085010.	3.0	3
94	A table-top laser-based source of short, collimated, ultra-relativistic positron beams. Proceedings of SPIE, 2013, , .	0.8	2
95	An investigation of the L-shell x-ray conversion efficiency for laser-irradiated tin foils. Plasma Science and Technology, 2020, 22, 045201.	1.5	2
96	Advanced Diagnostics Applied to a Laser-Driven Electron-Acceleration Experiment. IEEE Transactions on Plasma Science, 2008, 36, 1699-1706.	1.3	1
97	Laser-IORT: a laser-driven source of relativistic electrons suitable for Intra-Operative Radiation Therapy of tumors. , 2010, , .		1
98	Enhanced laser-driven proton-acceleration from limited mass targets by high temporal contrast ultra-intense lasers. , 2010, , .		1
99	Laser-driven Thomson scattering for the generation of ultra-bright multi-MeV gamma-ray beams. Proceedings of SPIE, 2015, , .	0.8	1
100	Shocks in unmagnetized plasma with a shear flow: Stability and magnetic field generation. Physics of Plasmas, 2015, 22, 072104.	1.9	1
101	Comprehensive numerical modelling of the performance of a second harmonic generation stage coupled with a low-gain optical parametric amplifier. Optics Express, 2016, 24, 5212.	3.4	1
102	Pulse chirping effect on controlling the transverse cavity oscillations in nonlinear bubble regime. Chinese Physics B, 2017, 26, 025201.	1.4	1
103	Characterization of ultrashort laser pulses employing self-phase modulation dispersion-scan technique. Journal of Optics (United Kingdom), 2018, 20, 035502.	2.2	1
104	Sarri etÂal. Reply:. Physical Review Letters, 2020, 124, 179502.	7.8	1
105	Intense gamma-ray source based on focused electron beams from a laser wakefield accelerator. Applied Physics Letters, 2022, 120, .	3.3	1
106	Relativistic Current Dynamics Investigations By Proton Probing. , 2009, , .		0
107	Field dynamics and filament growth following high-intensity laser-solid interactions. , 2009, , .		0
108	Observation of Quasi Mono-Energetic Protons in Laser Spray-Target Interaction. , 2010, , .		0

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109	Results of a laser-driven electron acceleration experiment and perspectives of application for nuclear studies. Radiation Effects and Defects in Solids, 2010, 165, 774-779.	1.2	0
110	Employing laser-accelerated proton beams to diagnose high intensity laser-plasma interactions. , 2012, , .		0
111	Temporal evolution of high mach number electrostatic shocks in laboratory plasma. , 2012, , .		0
112	Magnetic field suppression in collision-less shocks generated during the expansion of a dense plasma into a rarefied medium. EAS Publications Series, 2012, 58, 33-36.	0.3	0
113	Scaling of ion spectral peaks in the hybrid RPA-TNSA region. Journal of the Korean Physical Society, 2016, 68, 768-771.	0.7	0
114	Single shot complete characterization of femtosecond laser pulses employing self-phase modulation. Laser Physics, 2019, 29, 085001.	1.2	0
115	Generation of photoionized plasmas in the laboratory: Analogues to astrophysical sources. Proceedings of the International Astronomical Union, 2019, 15, 321-325.	0.0	0
116	10.1063/1.3469762.1. , 2010, , .		0
117	10.1063/1.4926525.3. , 2015, , .		0
118	Summary of Working Group 4: Application of compact and high-gradient accelerators. Journal of Physics: Conference Series, 2020, 1596, 012034.	0.4	0
119	L-Shell X-Ray Conversion Yields for Laser-Irradiated Tin and Silver Foils. Laser and Particle Beams, 2022, 2022, .	1.0	0