

João Jorge Santos

List of Publications by Year in descending order

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116
papers

3,198
citations

147801

31
h-index

168389

53
g-index

120
all docs

120
docs citations

120
times ranked

1884
citing authors

#	ARTICLE	IF	CITATIONS
1	K α fluorescence measurement of relativistic electron transport in the context of fast ignition. Physical Review E, 2004, 69, 066414.	2.1	225
2	High-Resolution γ -Ray Radiography Produced by a Laser-Plasma Driven Electron Source. Physical Review Letters, 2005, 94, 025003.	7.8	201
3	Fast Electron Transport in Ultraintense Laser Pulse Interaction with Solid Targets by Rear-Side Self-Radiation Diagnostics. Physical Review Letters, 2002, 89, 025001.	7.8	172
4	Laser-driven platform for generation and characterization of strong quasi-static magnetic fields. New Journal of Physics, 2015, 17, 083051.	2.9	130
5	Observation of Laser-Pulse Shortening in Nonlinear Plasma Waves. Physical Review Letters, 2005, 95, 205003.	7.8	123
6	Physics of giant electromagnetic pulse generation in short-pulse laser experiments. Physical Review E, 2015, 91, 043106.	2.1	102
7	Evidence of Ultrashort Electron Bunches in Laser-Plasma Interactions at Relativistic Intensities. Physical Review Letters, 2003, 91, 105001.	7.8	91
8	Direct measurement of kilo-tesla level magnetic field generated with laser-driven capacitor-coil target by proton deflectometry. Applied Physics Letters, 2016, 108, .	3.3	88
9	Guiding of relativistic electron beams in dense matter by laser-driven magnetostatic fields. Nature Communications, 2018, 9, 102.	12.8	86
10	Inhibition of fast electron energy deposition due to preplasma filling of cone-attached targets. Physics of Plasmas, 2008, 15, .	1.9	85
11	Study of Ultraintense Laser-Produced Fast-Electron Propagation and Filamentation in Insulator and Metal Foil Targets by Optical Emission Diagnostics. Physical Review Letters, 2006, 96, 125002.	7.8	75
12	Magnetized fast isochoric laser heating for efficient creation of ultra-high-energy-density states. Nature Communications, 2018, 9, 3937.	12.8	75
13	Fast-electron transport and heating of solid targets in high-intensity laser interactions measured by K α fluorescence. Physical Review E, 2006, 73, 046402.	2.1	70
14	Fast-electron transport and induced heating in aluminum foils. Physics of Plasmas, 2007, 14, .	1.9	68
15	Dynamic model of target charging by short laser pulse interactions. Physical Review E, 2015, 92, 043107.	2.1	65
16	Laser-driven strong magnetostatic fields with applications to charged beam transport and magnetized high energy-density physics. Physics of Plasmas, 2018, 25, .	1.9	58
17	Subfemtosecond, coherent, relativistic, and ballistic electron bunches generated at 1% and 2% in high intensity laser-matter interaction. Physics of Plasmas, 2005, 12, 063106.	1.9	57
18	Fast ignition realization experiment with high-contrast kilo-joule peta-watt LFEX laser and strong external magnetic field. Physics of Plasmas, 2016, 23, .	1.9	54

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19	Quasistationary magnetic field generation with a laser-driven capacitor-coil assembly. <i>Physical Review E</i> , 2017, 96, 023202.	2.1	51
20	Time-resolved compression of a capsule with a cone to high density for fast-ignition laser fusion. <i>Nature Communications</i> , 2014, 5, 5785.	12.8	50
21	Visualizing fast electron energy transport into laser-compressed high-density fast-ignition targets. <i>Nature Physics</i> , 2016, 12, 499-504.	16.7	49
22	Magnetically Guided Fast Electrons in Cylindrically Compressed Matter. <i>Physical Review Letters</i> , 2011, 107, 065004.	7.8	45
23	Controlling Fast-Electron-Beam Divergence Using Two Laser Pulses. <i>Physical Review Letters</i> , 2012, 109, 015001.	7.8	45
24	Unraveling the Solid-Liquid-Vapor Phase Transition Dynamics at the Atomic Level with Ultrafast X-Ray Absorption Near-Edge Spectroscopy. <i>Physical Review Letters</i> , 2011, 107, 245006.	7.8	44
25	Broadband, high dynamics and high resolution charge coupled device-based spectrometer in dynamic mode for multi-keV repetitive x-ray sources. <i>Review of Scientific Instruments</i> , 2009, 80, 083505.	1.3	43
26	Ultrafast Short-Range Disorder of Femtosecond-Laser-Heated Warm Dense Aluminum. <i>Physical Review Letters</i> , 2013, 111, 245004.	7.8	41
27	Collimated protons accelerated from an overdense gas jet irradiated by a 1- μm wavelength high-intensity short-pulse laser. <i>Scientific Reports</i> , 2017, 7, 13505.	3.3	37
28	Ultraintense Laser-Produced Fast-Electron Propagation in Gas Jets. <i>Physical Review Letters</i> , 2005, 94, 055004.	7.8	35
29	Relativistic High-Current Electron-Beam Stopping-Power Characterization in Solids and Plasmas: Collisional Versus Resistive Effects. <i>Physical Review Letters</i> , 2012, 109, 255002.	7.8	35
30	Development of x-ray radiography for high energy density physics. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	34
31	Fast electron heating of a solid target in ultrahigh-intensity laser pulse interaction. <i>Physical Review E</i> , 2004, 70, 055402.	2.1	33
32	Proton radiography of laser-driven imploding target in cylindrical geometry. <i>Physics of Plasmas</i> , 2011, 18, 012704.	1.9	30
33	A study of fast electron energy transport in relativistically intense laser-plasma interactions with large density scalelengths. <i>Physics of Plasmas</i> , 2012, 19, 053104.	1.9	28
34	X-ray absorption for the study of warm dense matter. <i>Plasma Physics and Controlled Fusion</i> , 2009, 51, 124021.	2.1	26
35	Fast-electron transport in cylindrically laser-compressed matter. <i>Plasma Physics and Controlled Fusion</i> , 2009, 51, 124035.	2.1	24
36	A reduced model for relativistic electron beam transport in solids and dense plasmas. <i>New Journal of Physics</i> , 2014, 16, 073014.	2.9	24

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37	Enhanced hot-electron localization and heating in high-contrast ultraintense laser irradiation of microcone targets. <i>Physical Review E</i> , 2009, 79, 036408.	2.1	23
38	Broad M-band multi-keV x-ray emission from plasmas created by short laser pulses. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	23
39	Enhanced Relativistic-Electron-Beam Energy Loss in Warm Dense Aluminum. <i>Physical Review Letters</i> , 2015, 114, 095004.	7.8	23
40	Measurements of parametric instabilities at laser intensities relevant to strong shock generation. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	23
41	Proton acceleration by collisionless shocks using a supersonic H ₂ gas-jet target and high-power infrared laser pulses. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	22
42	High-power 1 kHz laser-plasma x-ray source for ultrafast x-ray absorption near-edge spectroscopy in the keV range. <i>Applied Physics Letters</i> , 2008, 93, .	3.3	21
43	Collisional and collective effects in two dimensional model for fast-electron transport in refluxing regime. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	21
44	Generation and characterization of warm dense matter isochorically heated by laser-induced relativistic electrons in a wire target. <i>Europhysics Letters</i> , 2016, 114, 45002.	2.0	21
45	High flux of relativistic electrons produced in femtosecond laser-thin foil target interactions: Characterization with nuclear techniques. <i>Review of Scientific Instruments</i> , 2008, 79, 023504.	1.3	19
46	Double conical crystal x-ray spectrometer for high resolution ultrafast x-ray absorption near-edge spectroscopy of Al K edge. <i>Review of Scientific Instruments</i> , 2010, 81, 063107.	1.3	19
47	Measuring fast electron spectra and laser absorption in relativistic laser-solid interactions using differential bremsstrahlung photon detectors. <i>Review of Scientific Instruments</i> , 2013, 84, 083505.	1.3	19
48	Development of gas jet targets for laser-plasma experiments at near-critical density. <i>Review of Scientific Instruments</i> , 2019, 90, 063302.	1.3	19
49	Fast electron propagation in high density plasmas created by shock wave compression. <i>Plasma Physics and Controlled Fusion</i> , 2009, 51, 014005.	2.1	17
50	Thin target charging in short laser pulse interactions. <i>Physical Review E</i> , 2018, 98, .	2.1	17
51	Relativistic magnetic reconnection in laser laboratory for testing an emission mechanism of hard-state black hole system. <i>Physical Review E</i> , 2020, 102, 033202.	2.1	17
52	Exploring extreme magnetization phenomena in directly driven imploding cylindrical targets. <i>Plasma Physics and Controlled Fusion</i> , 2022, 64, 025007.	2.1	17
53	Laser-driven cylindrical compression of targets for fast electron transport study in warm and dense plasmas. <i>Physics of Plasmas</i> , 2011, 18, 043108.	1.9	16
54	Fast electron transport and induced heating in solid targets from rear-side interferometry imaging. <i>Physical Review E</i> , 2008, 77, 026408.	2.1	15

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55	Unraveling resistive versus collisional contributions to relativistic electron beam stopping power in cold-solid and in warm-dense plasmas. <i>Physics of Plasmas</i> , 2014, 21, 033101.	1.9	15
56	Over-critical sharp-gradient plasma slab produced by the collision of laser-induced blast-waves in a gas jet: Application to high-energy proton acceleration. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	14
57	Fast electron transport and heating in solid-density matter. <i>Laser and Particle Beams</i> , 2002, 20, 171-175.	1.0	13
58	Spectral tomographic analysis of Bremsstrahlung X-rays generated in a laser-produced plasma. <i>Laser and Particle Beams</i> , 2016, 34, 645-654.	1.0	13
59	Proton stopping measurements at low velocity in warm dense carbon. <i>Nature Communications</i> , 2022, 13, .	12.8	13
60	Transport of intense laser-produced electron beams in matter. <i>Plasma Physics and Controlled Fusion</i> , 2006, 48, B211-B220.	2.1	12
61	Propagation of a short-pulse laser-driven electron beam in matter. <i>Physics of Plasmas</i> , 2013, 20, 033105.	1.9	12
62	Measurement of reflectivity of spherically bent crystals using $K\beta$ signal from hot electrons produced by laser-matter interaction. <i>Review of Scientific Instruments</i> , 2015, 86, 073507.	1.3	12
63	Isochoric heating and strong blast wave formation driven by fast electrons in solid-density targets. <i>New Journal of Physics</i> , 2017, 19, 103005.	2.9	11
64	Collimated Propagation of Fast Electron Beams Accelerated by High-Contrast Laser Pulses in Highly Resistive Shocked Carbon. <i>Physical Review Letters</i> , 2017, 118, 205001.	7.8	11
65	Enhanced relativistic-electron beam collimation using two consecutive laser pulses. <i>Scientific Reports</i> , 2019, 9, 14061.	3.3	11
66	Proton deflectometry of a capacitor coil target along two axes. <i>High Power Laser Science and Engineering</i> , 2020, 8, .	4.6	11
67	Dynamics of rare gas nanoclusters irradiated by short and intense laser pulses. <i>High Energy Density Physics</i> , 2007, 3, 191-197.	1.5	10
68	Sub-picosecond and nanometer scale dynamics of aluminum target surface heated by ultrashort laser pulse. <i>Applied Physics Letters</i> , 2013, 102, 194104.	3.3	10
69	Proton radiography of cylindrical laser-driven implosions. <i>Plasma Physics and Controlled Fusion</i> , 2011, 53, 032003.	2.1	9
70	Generation of focusing ion beams by magnetized electron sheath acceleration. <i>Scientific Reports</i> , 2020, 10, 18966.	3.3	9
71	A quasi-monoenergetic short time duration compact proton source for probing high energy density states of matter. <i>Scientific Reports</i> , 2021, 11, 6881.	3.3	9
72	Supra-thermal electron beam stopping power and guiding in dense plasmas. <i>Journal of Plasma Physics</i> , 2013, 79, 429-435.	2.1	8

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73	Study of plasma heating induced by fast electrons. <i>Physics of Plasmas</i> , 2009, 16, 122701.	1.9	7
74	New developments in energy transfer and transport studies in relativistic laser-matter interactions. <i>Plasma Physics and Controlled Fusion</i> , 2010, 52, 124046.	2.1	7
75	X-ray polarization spectroscopy to study anisotropic velocity distribution of hot electrons produced by an ultra-high-intensity laser. <i>Physical Review E</i> , 2010, 81, 036410.	2.1	7
76	High-resolution x-ray imaging of $K\alpha$ volume radiation induced by high-intensity laser pulse interaction with a copper target. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2012, 45, 205701.	1.5	7
77	Whispering Gallery Effect in Relativistic Optics. <i>JETP Letters</i> , 2018, 107, 351-354.	1.4	7
78	Innovative Education and Training in high power laser plasmas (PowerLaPs) for plasma physics, high power laser-matter interactions and high energy density physics – theory and experiments. <i>High Power Laser Science and Engineering</i> , 2019, 7, .	4.6	7
79	Fast electron energy deposition in aluminium foils: Resistive vs. drag heating. <i>European Physical Journal: Special Topics</i> , 2009, 175, 71-76.	2.6	6
80	Controlling the fast electron divergence in a solid target with multiple laser pulses. <i>Physical Review E</i> , 2014, 90, 063108.	2.1	6
81	Transport and spatial energy deposition of relativistic electrons in copper-doped fast ignition plasmas. <i>Physics of Plasmas</i> , 2017, 24, 102710.	1.9	6
82	Fast electron beam measurements from relativistically intense, frequency-doubled laser-solid interactions. <i>New Journal of Physics</i> , 2013, 15, 093021.	2.9	5
83	Monte-Carlo simulation of noise in hard X-ray Transmission Crystal Spectrometers: Identification of contributors to the background noise and shielding optimization. <i>Review of Scientific Instruments</i> , 2014, 85, 11D615.	1.3	5
84	Role of relativistic laser intensity on isochoric heating of metal wire targets. <i>Optics Express</i> , 2021, 29, 12240.	3.4	5
85	Fast electron propagation in high-density plasmas created by 1D shock wave compression: Experiments and simulations. <i>Journal of Physics: Conference Series</i> , 2010, 244, 022060.	0.4	4
86	Experimental and Monte Carlo absolute characterization of a medical electron beam using a magnetic spectrometer. <i>Radiation Measurements</i> , 2016, 86, 16-23.	1.4	4
87	Characterization of an imploding cylindrical plasma for electron transport studies using x-ray emission spectroscopy. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	4
88	Optical shadowgraphy and proton imaging as diagnostics tools for fast electron propagation in ultrahigh-intensity laser-matter interaction. <i>Radiation Effects and Defects in Solids</i> , 2005, 160, 575-585.	1.2	3
89	Three-Dimensional Simulations of Cylindrical Target Implosion Imaging Using Laser-Driven Proton Source. <i>IEEE Transactions on Plasma Science</i> , 2012, 40, 1131-1133.	1.3	3
90	Simultaneous measurement of self-generated magnetic fields and electron heat transport in dense plasma. <i>Laser and Particle Beams</i> , 2013, 31, 653-661.	1.0	3

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91	An interferometric diagnostic for the experimental study of dynamics of solids exposed to intense and ultrashort radiation. , 2013, , .		3
92	Approach to the study of fast electron transport in cylindrically imploded targets. Laser and Particle Beams, 2015, 33, 525-534.	1.0	3
93	Generation of high pressures by short-pulse low-energy laser irradiation. Europhysics Letters, 2017, 119, 35001.	2.0	3
94	Space and time resolved measurement of surface magnetic field in high intensity short pulse laser matter interactions. Physics of Plasmas, 2019, 26, .	1.9	3
95	Recent experiment on fast electron transport in ultra-high intensity laser interaction. Journal of Physics: Conference Series, 2008, 112, 022048.	0.4	2
96	Enhanced energy localization and heating in high contrast ultra-intense laser produced plasmas via novel conical micro-target design. Journal of Physics: Conference Series, 2008, 112, 022050.	0.4	2
97	Importance of magnetic resistive fields in the heating of a micro-cone target irradiated by a high intensity laser. European Physical Journal: Special Topics, 2009, 175, 89-95.	2.6	2
98	Temporally resolved proton radiography of rapidly varying electric and magnetic fields in laser-driven capacitor coil targets. Proceedings of SPIE, 2017, , .	0.8	2
99	Application of laser-driven capacitor-coil to target normal sheath acceleration. High Energy Density Physics, 2020, 37, 100874.	1.5	2
100	High energy electron transport in solids. European Physical Journal Special Topics, 2006, 133, 355-360.	0.2	2
101	Fast electron transport dynamics and energy deposition in magnetized, imploded cylindrical plasma. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200052.	3.4	2
102	Progress in relativistic laser-plasma interaction with kilotesla-level applied magnetic fields. Physics of Plasmas, 2022, 29, 053104.	1.9	2
103	X-ray diagnostics of fast electrons propagation in high density plasmas obtained by cylindrical compression. Journal of Physics: Conference Series, 2010, 244, 022027.	0.4	1
104	Transport of kJ-laser-driven relativistic electron beams in cold and shock-heated vitreous carbon and diamond. New Journal of Physics, 2020, 22, 033031.	2.9	1
105	Characterization of ultraintense laser produced fast electron propagation in insulators vs. conductors by optical emission diagnostics. European Physical Journal Special Topics, 2006, 133, 499-502.	0.2	1
106	Proton Radiography for Inertial Confinement Fusion. Journal of the Korean Physical Society, 2011, 59, 3160-3165.	0.7	1
107	Propagation In Matter Of Currents Of Relativistic Electrons Beyond The Alfvén Limit, Produced In Ultra-High-Intensity Short-Pulse Laser-Matter Interactions. AIP Conference Proceedings, 2004, , .	0.4	0
108	Ultra Intense Laser Produced Fast Electron Propagation and Filamentation in Insulators vs Conductors by Optical Emission Diagnostics. AIP Conference Proceedings, 2006, , .	0.4	0

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109	Laser-plasma interactions in the context of inertial fusion research. AIP Conference Proceedings, 2008, , .	0.4	0
110	Fast electron transport and induced heating in aluminium foils. Journal of Physics: Conference Series, 2008, 112, 022088.	0.4	0
111	Recent results at LULI on fast electron transport with and without guiding cone in the context of fast ignitor. European Physical Journal: Special Topics, 2009, 175, 77-82.	2.6	0
112	Measurements of Self-Generated Magnetic Fields Influence on Electron Heat Conduction in Dense Plasmas. , 2010, , .		0
113	Can proton radiography be used to image imploding target in ICF experiments?. , 2011, , .		0
114	Relativistic high-current electron beams in dense plasmas in the context of the fast ignition of inertially confined fusion targets. , 2013, , .		0
115	On the proton radiography of magnetic fields in targets irradiated by intense picosecond laser pulses. Journal of Physics: Conference Series, 2020, 1686, 012004.	0.4	0
116	Characterizing the Effect of Magnetization at >10 kT in Cylindrically Imploded Hot Dense Plasmas Using Dopant Spectroscopy Techniques and Benchmarked Simulations. , 2022, , .		0