Jean-Christophe Pain

List of Publications by Year
in descending order

96	1,191	430874 18	414414 32
papers	citations	h-index	g-index

101	101	101	814
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Adaptive Algorithm for the Generation of Superconfigurations in Hot-Plasma Opacity Calculations. Plasma, 2022, 5, 154-175.	1.8	4
2	Ionization by electron impacts and ionization potential depression. Journal of Physics B: Atomic, Molecular and Optical Physics, 2022, 55, 105001.	1.5	3
3	Sum rules for Clebschâ€“Gordan coefficients from group theory and Runge-Lenz-Pauli vector. Journal of Physics Communications, 2022, 6, 055007.	1.2	2
4	Issues in the calculations of dc conductivity of warm dense aluminium. Contributions To Plasma Physics, 2022, 62, .	1.1	4
5	On the Wigner-Kirkwood Expansion of the Free Energy and the Evaluation of the Quantum Correction. Atoms, 2022, 10, 65.	1.6	0
6	Simple electron-impact excitation cross-sections including plasma density effects. High Energy Density Physics, 2021, 38, 100923.	1.5	4
7	New sum rules for Wigner 3jm symbols: application to expectation values of hydrogenic ions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2021, 54, 065002.	1.5	2
8	Distribution of the total angular momentum in relativistic configurations. Journal of Physics B: Atomic, Molecular and Optical Physics, 2021, 54, 145006.	1.5	1
9	Angular momentum distribution in a relativistic configuration: magnetic quantum number analysis. Journal of Physics B: Atomic, Molecular and Optical Physics, 2021, 54, 145002.	1.5	3
10	Super Transition Arrays: A Tool for Studying Spectral Properties of Hot Plasmas. Plasma, 2021, 4, 42-64.	1.8	8
11	Exact expressions for the number of levels in single- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>j</mml:mi></mml:math> orbits for three, four, and five fermions. Physical Review C, 2021, 104, .	2.9	2
12	Free-free matrix-elements for two-photon opacity. High Energy Density Physics, 2020, 34, 100717.	1.5	3
13	Super-transition-array calculations for synthetic spectra and opacity of high-density, high-temperature germanium plasmas. High Energy Density Physics, 2020, 35, 100742.	1.5	5
14	Some properties of Wigner 3j coefficients: non-trivial zeros and connections to hypergeometric functions. European Physical Journal A, 2020, 56, 1.	2.5	2
15	Optimized recursion relation for the computation of partition functions in the superconfiguration approach. High Energy Density Physics, 2020, 37, 100891.	1.5	7
16	Consistent approach for electrical resistivity within Ziman's theory from solid state to hot dense plasma: Application to aluminum. Physical Review E, 2020, 102, 053209.	2.1	13
17	Analytical and numerical expressions for the number of atomic configurations contained in a supershell. Journal of Physics B: Atomic, Molecular and Optical Physics, 2020, 53, 115002.	1.5	5
18	A quantitative study of some sources of uncertainty in opacity measurements. High Energy Density Physics, 2020, 34, 100745.	1.5	9

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19	Electron Broadening Operator Including Penetrating Collisions for Hydrogen. Atoms, 2020, 8, 2.	1.6	1
20	Expression of the Holtsmark function in terms of hypergeometric $$_{2}F_2$$ and Airy Bi functions. European Physical Journal Plus, 2020, 135, 1.	2.6	0
21	Expression of Relativistic Expectation Values of Powers of r in Terms of Clebschâ€“Gordan Coefficients. Optics and Spectroscopy (English Translation of Optika I Spektroskopiya), 2020, 128, 1105-1109.	0.6	1
22	Extreme-UV absorption processes in a laser-produced mid-Z plasma: Measurements and theoretical interpretation. High Energy Density Physics, 2019, 33, 100706.	1.5	3
23	On the statistical properties of a hydrogenic atom broadened by linear Stark effect. Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, 52, 245001.	1.5	3
24	Total number of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>J</mml:mi></mml:math> levels for identical particles in a single- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>j</mml:mi></mml:math> shell using coefficients of fractional parentage. Physical Review C, 2019, 99, .	2.9	4
25	Systematic Study of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>L</mml:mi></mml:math> -Shell Opacity at Stellar Interior Temperatures. Physical Review Letters, 2019, 122, 235001.	7.8	78
26	Modeling penetrating collisions in the standard line broadening impact theory for hydrogen. High Energy Density Physics, 2019, 30, 52-59.	1.5	3
27	Plasma potential and opacity calculations. High Energy Density Physics, 2019, 32, 8-13.	1.5	5
28	Comment on electron-impact excitation cross section measurements for He-like xenon. Canadian Journal of Physics, 2019, 97, 576-578.	1.1	1
29	Unusual sum rule for Clebschâ€“Gordan coefficients. Letters in Mathematical Physics, 2019, 109, 2485-2490.	1.1	1
30	On the Li-Rosmej analytical formula for energy level shifts in dense plasmas. High Energy Density Physics, 2019, 31, 99-100.	1.5	5
31	Simultaneous X-ray and XUV absorption measurements in nickel laser-produced plasma close to LTE. High Energy Density Physics, 2019, 31, 83-91.	1.5	3
32	Thermal electronic properties of aluminum under pressure: The role of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>s</mml:mi><mml:mi>p</mml:mi></mml:mrow></mml:ma to <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>3</mml:mn><mml:mi>d</mml:mi></mml:mrow></mml:r electron transfer. Physical Review B, 2019, 100, .	3.2	4
33	On the vacuum-polarization Uehling potential for a Fermi charge distribution. European Physical Journal D, 2018, 72, 1.	1.3	1
34	A note on the contribution of multi-photon processes to radiative opacity. High Energy Density Physics, 2018, 26, 23-25.	1.5	6
35	Broadening of the Neutral Helium 492 nm Line in a Corona Discharge: Code Comparisons and Data Fitting. Atoms, 2018, 6, 19.	1.6	4
36	Recursive determination of phase shifts for screened Coulomb potentials. Journal of Physics Communications, 2018, 2, 025015.	1.2	3

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37	D'yakov-Kontorovitch instability of shock waves in hot plasmas. Physical Review E, 2018, 98, .	2.1	14
38	ZEST: A Fast Code for Simulating Zeeman-Stark Line-Shape Functions. Atoms, 2018, 6, 11.	1.6	5
39	H-Î² Line in a Corona Helium Plasma: A Multi-Code Line Shape Comparison. Atoms, 2018, 6, 29.	1.6	2
40	Number of spin- J states and odd-even staggering for identical particles in a single- j shell. Physical Review C, 2018, 97, .	2.9	3
41	Lâ€™hÃ©lio-sismologie et lâ€™Ã©nigme de lâ€™opacitÃ© du fer. , 2018, , 10-15.	0.1	0
42	Opacity spectra of silicon and carbon in ICF plasmas. AIP Conference Proceedings, 2017, , .	0.4	1
43	Calculation of atomic structures and radiative properties of fusion plasmas. AIP Conference Proceedings, 2017, , .	0.4	0
44	K-shell spectroscopy in hot plasmas: Stark effect, Breit interaction and QED corrections. AIP Conference Proceedings, 2017, , .	0.4	1
45	Statistical properties of levels and lines in complex spectra: A tribute to Jacques Bauche and Claire Bauche-Arnoult. AIP Conference Proceedings, 2017, , .	0.4	2
46	Analysis of the X-ray emission spectra of copper, germanium and rubidium plasmas produced at the Phelix laser facility. AIP Conference Proceedings, 2017, , .	0.4	2
47	The hybrid detailed / statistical opacity code SCO-RCG: New developments and applications. AIP Conference Proceedings, 2017, , .	0.4	5
48	A project based on multi-configuration Diracâ€“Fock calculations for plasma spectroscopy. High Energy Density Physics, 2017, 24, 1-8.	1.5	3
49	NLTE opacity calculations: C-Si and C-Ge mixtures. High Energy Density Physics, 2017, 24, 64-74.	1.5	5
50	Detailed Opacity Calculations for Astrophysical Applications. Atoms, 2017, 5, 22.	1.6	11
51	Configuration interaction effect on open M shell Fe and Ni LTE spectral opacities, Rosseland and Planck means. Journal of Physics: Conference Series, 2016, 717, 012017.	0.4	0
52	Model uncertainties of local-thermodynamic-equilibrium K-shell spectroscopy. High Energy Density Physics, 2016, 20, 17-22.	1.5	21
53	Comment on â€œLarge Enhancement in High-Energy Photoionization of Fe XVII and Missing Continuum Plasma Opacityâ€• Physical Review Letters, 2016, 117, 249501.	7.8	18
54	Stark effect modeling in the detailed opacity code SCO-RCG. Journal of Physics: Conference Series, 2016, 717, 012074.	0.4	1

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55	Characterization of near-LTE, high-temperature and high-density aluminum plasmas produced by ultra-high intensity lasers. High Energy Density Physics, 2015, 16, 12-17.	1.5	21
56	Opacity calculations. Ge and Si dopants in ICF. High Energy Density Physics, 2015, 16, 23-27.	1.5	9
57	A higher-than-predicted measurement of iron opacity at solar interior temperatures. Nature, 2015, 517, 56-59.	27.8	321
58	Analysis of X-ray and Thomson scattering data from non-LTE Nb and Ta plasmas. High Energy Density Physics, 2015, 16, 41-52.	1.5	0
59	Detailed computation of hot-plasma atomic spectra. Laser and Particle Beams, 2015, 33, 201-210.	1.0	14
60	Open M-shell Fe and Ni LTE opacity calculations with the code HULLAC-v9. High Energy Density Physics, 2015, 16, 1-11.	1.5	7
61	Accounting for highly excited states in detailed opacity calculations. High Energy Density Physics, 2015, 15, 30-42.	1.5	42
62	X-ray opacity measurements in mid-Z dense plasmas with a new target design of indirect heating. High Energy Density Physics, 2015, 17, 231-239.	1.5	9
63	Regularities and symmetries in atomic structure and spectra. High Energy Density Physics, 2013, 9, 392-401.	1.5	11
64	Opacity calculations in ICF plasmas. High Energy Density Physics, 2013, 9, 553-559.	1.5	4
65	Commutation relations of operator monomials. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 035304.	2.1	8
66	Theoretical interpretation for 2pâ^'ndabsorption spectra of iron, nickel, and copper in X-ray range measured at the LULI2000 facility. EPJ Web of Conferences, 2013, 59, 14001.	0.3	0
67	Opacity of germanium and silicon in ICF plasmas. Proceedings of SPIE, 2013, , .	0.8	3
68	Description of anomalous Zeeman patterns in stellar astrophysics. EAS Publications Series, 2012, 58, 69-73.	0.3	2
69	Characterization of anomalous Zeeman patterns in complex atomic spectra. Physical Review A, 2012, 85, .	2.5	10
70	Statistics of electric-quadrupole lines in atomic spectra. Journal of Physics B: Atomic, Molecular and Optical Physics, 2012, 45, 135006.	1.5	7
71	Equation of State of Dense Plasma Mixtures: Application to the Sun Center. Contributions To Plasma Physics, 2012, 52, 23-27.	1.1	5
72	Generating functions for canonical systems of fermions. Physical Review E, 2011, 83, 067701.	2.1	9

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73	display="inline"><mml:mi>j</mml:mi></mml:math>and nine-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>j</mml:mi></mml:math>symbols for a single-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"	2.9	7
74	Opacity of iron, nickel, and copper plasmas in the x-ray wavelength range: Theoretical interpretation of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>2</mml:mn><mml:mi>p</mml:mi><mml:mo>â^'</mml:mo><mml:mn>3</mml:mn><mml:mi>d spectra. Physical Review E, 2011, 84, 036407.	2.1	23
75	Self-consistent modelling of hot plasmas within non-extensive Tsallisâ€™ thermostatistics. European Physical Journal D, 2011, 65, 441-445.	1.3	2
76	A consistent approach for mixed detailed and statistical calculation of opacities in hot plasmas. High Energy Density Physics, 2011, 7, 234-239.	1.5	52
77	Comment on â€œA note on generalized radial mesh generation for plasma electronic structureâ€. High Energy Density Physics, 2011, 7, 224.	1.5	2
78	Corrections to statistical modeling of spectra for plasmas at moderate or low temperatures. High Energy Density Physics, 2011, 7, 277-284.	1.5	9
79	Theoretical interpretation of X-rays photo-absorption in medium-Z elements plasmas measured at LULI2000 facility. High Energy Density Physics, 2011, 7, 320-326.	1.5	11
80	Koopmans' theorem in the statistical Hartreeâ€“Fock theory. Journal of Physics B: Atomic, Molecular and Optical Physics, 2011, 44, 145001.	1.5	6
81	Radiative properties in ICF plasmas. Proceedings of SPIE, 2011, , .	0.8	0
82	A note on recursive calculations of particular 9jcoefficients. Lithuanian Journal of Physics, 2011, 51, 194-198.	0.4	0
83	Electrical Resistivity in Warm Dense Plasmas Beyond the Averageâ€Atom Model. Contributions To Plasma Physics, 2010, 50, 39-45.	1.1	21
84	Efficient methods for calculating the number of states, levels and lines in atomic configurations. High Energy Density Physics, 2009, 5, 320-327.	1.5	20
85	Absorption spectroscopy of mid and neighboring Z plasmas: Iron, nickel,copper and germanium. High Energy Density Physics, 2009, 5, 173-181.	1.5	36
86	Jensen-Feynman approach to the statistics of interacting electrons. Physical Review E, 2009, 80, 026703.	2.1	14
87	ON THE EXISTENCE OF SHOCK INSTABILITIES AT HUGONIOT PRESSURES BEYOND THE MINIMUM VOLUME. , 2009, , .		2
88	Benfordâ€™s law and complex atomic spectra. Physical Review E, 2008, 77, 012102.	2.1	31
89	Impact of high-order moments on the statistical modeling of transition arrays. Physical Review E, 2008, 77, 026708.	2.1	14
90	Further stable methods for the calculation of partition functions in the superconfiguration approach. Physical Review E, 2007, 76, 032103.	2.1	18

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91	Quantumâ€Statistical Equationâ€ofâ€State Models of Dense Plasmas: Highâ€Pressure Hugoniot Shock Adiabats. Contributions To Plasma Physics, 2007, 47, 421-434.	1.1	12
92	Shell-structure effects on high-pressure Rankineâ€“Hugoniot shock adiabats. High Energy Density Physics, 2007, 3, 204-210.	1.5	19
93	Equation-of-state model for shock compression of hot dense matter. Physics Letters, Section A: General, Atomic and Solid State Physics, 2007, 362, 120-124.	2.1	25
94	A self-consistent model for the study of electronic properties of hot dense plasmas in the superconfiguration approximation. Journal of Quantitative Spectroscopy and Radiative Transfer, 2006, 99, 451-468.	2.3	27
95	Stable method for the calculation of partition functions in the superconfiguration approach. Physical Review E, 2004, 69, 056117.	2.1	30
96	Self-consistent approach for the thermodynamics of ions in dense plasmas in the superconfiguration approximation. Journal of Quantitative Spectroscopy and Radiative Transfer, 2003, 81, 355-369.	2.3	26