

# Rafael Rodriguez

## List of Publications by Year in descending order

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80  
papers

797  
citations

516710

16  
h-index

610901

24  
g-index

81  
all docs

81  
docs citations

81  
times ranked

508  
citing authors

#	ARTICLE	IF	CITATIONS
1	Monochromatic and mean radiative properties of astrophysical plasma mixtures in nonlocal thermodynamic equilibrium regime. <i>X-Ray Spectrometry</i> , 2020, 49, 6-10.	1.4	2
2	Generation and Parametrization of Mean Plasma Radiative Properties Databases for Astrophysics and Nuclear Fusion Applications. <i>International Journal of Computational Methods</i> , 2020, 17, 1940003.	1.3	0
3	Simulation of Plasma Microscopy Properties and Ion Beam-Plasma Interaction Processes in Plasmas by Using MIXKIP/RAPCAL/STOPP CODE. <i>International Journal of Computational Methods</i> , 2020, 17, 1940009.	1.3	0
4	Simulation of the ion beam-plasma interaction processes for point-like ions in doped DT plasmas. <i>X-Ray Spectrometry</i> , 2020, 49, 173-176.	1.4	1
5	Bound electron stopping power model of partially stripped ions in partially ionized plasmas. <i>X-Ray Spectrometry</i> , 2020, 49, 234-238.	1.4	3
6	Effects of radiation in accretion regions of classical T Tauri stars. <i>Astronomy and Astrophysics</i> , 2019, 629, L9.	5.1	7
7	Analysis of radiative opacities for optically thin and thick astrophysical plasmas. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2019, 237, 106633.	2.3	1
8	Non-LTE radiation hydrodynamics in PLUTO. <i>Astronomy and Astrophysics</i> , 2019, 631, A41.	5.1	4
9	Analysis of microscopic properties of radiative shock experiments performed at the Orion laser facility. <i>High Power Laser Science and Engineering</i> , 2018, 6, .	4.6	6
10	Radiative properties for astrophysical plasma mixtures in nonlocal thermodynamic equilibrium. <i>Physical Review E</i> , 2018, 98, .	2.1	11
11	Energy loss of Fe ions in He plasmas at different thermodynamic states. <i>Physics of Plasmas</i> , 2018, 25, 093113.	1.9	4
12	Stopping power of a helium plasma under LTE or NLTE conditions. <i>Laser and Particle Beams</i> , 2018, 36, 442-447.	1.0	2
13	Experimental study of the interaction of two laser-driven radiative shocks at the PALS laser. <i>High Energy Density Physics</i> , 2017, 23, 20-30.	1.5	12
14	Counter-propagating radiative shock experiments on the Orion laser and the formation of radiative precursors. <i>High Energy Density Physics</i> , 2017, 23, 60-72.	1.5	12
15	Influence of atomic kinetics in the simulation of plasma microscopic properties and thermal instabilities for radiative bow shock experiments. <i>Physical Review E</i> , 2017, 95, 033201.	2.1	13
16	Counterpropagating Radiative Shock Experiments on the Orion Laser. <i>Physical Review Letters</i> , 2017, 119, 055001.	7.8	24
17	Laboratory unraveling of matter accretion in young stars. <i>Science Advances</i> , 2017, 3, e1700982.	10.3	35
18	Mapping natural radioactivity of soils in the eastern Canary Islands. <i>Journal of Environmental Radioactivity</i> , 2017, 166, 242-258.	1.7	40

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19	Enhancement of Quasistationary Shocks and Heating via Temporal Staging in a Magnetized Laser-Plasma Jet. <i>Physical Review Letters</i> , 2017, 119, 255002.	7.8	18
20	BOW SHOCK FRAGMENTATION DRIVEN BY A THERMAL INSTABILITY IN LABORATORY ASTROPHYSICS EXPERIMENTS. <i>Astrophysical Journal</i> , 2015, 815, 96.	4.5	32
21	Structure of a laser-driven radiative shock. <i>High Energy Density Physics</i> , 2015, 17, 106-113.	1.5	21
22	Collisional radiative average atom code based on a relativistic Screened Hydrogenic Model. <i>High Energy Density Physics</i> , 2015, 14, 18-29.	1.5	5
23	Microscopic properties of xenon plasmas for density and temperature regimes of laboratory astrophysics experiments on radiative shocks. <i>Physical Review E</i> , 2015, 91, 053106.	2.1	6
24	Cylindrical liner Z-pinch experiments for fusion research and high-energy-density physics. <i>Journal of Plasma Physics</i> , 2015, 81, .	2.1	16
25	A simple methodology for characterization of germanium coaxial detectors by using Monte Carlo simulation and evolutionary algorithms. <i>Journal of Environmental Radioactivity</i> , 2015, 149, 8-18.	1.7	21
26	Time-dependent and radiation field effects on collisional-radiative simulations of radiative properties of blast waves launched in clusters of xenon. <i>High Energy Density Physics</i> , 2015, 17, 119-128.	1.5	0
27	Collisional-radiative simulations of a supersonic and radiatively cooled aluminum plasma jet. <i>High Energy Density Physics</i> , 2015, 17, 74-84.	1.5	8
28	Calculation of radiative opacity of plasma mixtures using a relativistic screened hydrogenic model. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2014, 140, 81-98.	2.3	6
29	Parametrization of Mean Radiative Properties of Optically Thin Steady-State Plasmas and Applications. <i>Communications in Computational Physics</i> , 2014, 16, 612-631.	1.7	10
30	Relativistic screened hydrogenic radial integrals. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2013, 117, 123-132.	2.3	6
31	Analysis of the influence of the plasma thermodynamic regime in the spectrally resolved and mean radiative opacity calculations of carbon plasmas in a wide range of density and temperature. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2013, 114, 136-150.	2.3	6
32	Parametrization of the average ionization and radiative cooling rates of carbon plasmas in a wide range of density and temperature. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2013, 125, 123-138.	2.3	5
33	Analysis of microscopic magnitudes of radiative blast waves launched in xenon clusters with collisional-radiative steady-state simulations. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2013, 125, 69-83.	2.3	5
34	Natural radioactivity measurements of beach sands in Gran Canaria, Canary Islands (Spain). <i>Radiation Protection Dosimetry</i> , 2013, 156, 75-86.	0.8	17
35	Atomic Physics Modeling and Applications for ICF Plasmas. <i>Plasma and Fusion Research</i> , 2013, 8, 3404056-3404056.	0.7	0
36	Determination and analysis of plasma parameters for simulations of radiative blast waves launched in clusters of xenon and krypton. <i>Plasma Physics and Controlled Fusion</i> , 2012, 54, 045012.	2.1	18

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37	Modelling of spectral properties and population kinetics studies of inertial fusion and laboratory-astrophysical plasmas. <i>Plasma Physics and Controlled Fusion</i> , 2012, 54, 124004.	2.1	2
38	Studying radiative shocks using laser driven blast waves in clustered gases. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2011, 653, 186-188.	1.6	6
39	Determination and Analysis of the Thermodynamic Regimes of Xenon Plasmas. <i>Contributions To Plasma Physics</i> , 2011, 51, 863-876.	1.1	5
40	Determination of the average ionization and thermodynamic regimes of xenon plasmas with an application to the characterization of blast waves launched in xenon clusters. <i>High Energy Density Physics</i> , 2011, 7, 71-76.	1.5	6
41	A new set of relativistic screening constants for the screened hydrogenic model. <i>High Energy Density Physics</i> , 2011, 7, 169-179.	1.5	16
42	Analytical expressions for radiative opacities of low Z plasmas. <i>Journal of Physics: Conference Series</i> , 2010, 244, 042002.	0.4	0
43	Opacity calculations for ICF target physics using the ABAKO/RAPCAL code. <i>Journal of Physics: Conference Series</i> , 2010, 244, 042003.	0.4	0
44	Opacity calculation for target physics using the ABAKO/RAPCAL code. <i>High Energy Density Physics</i> , 2010, 6, 57-65.	1.5	13
45	Argon K-shell and bound-free emission from OMEGA direct-drive implosion cores. <i>High Energy Density Physics</i> , 2010, 6, 70-75.	1.5	20
46	Collisional-radiative Calculations of Optically Thin and Thick Plasmas Using the Computational Package ABAKO/RAPCAL. <i>Communications in Computational Physics</i> , 2010, 8, 185-210.	1.7	24
47	Modeling of population kinetics of plasmas that are not in local thermodynamic equilibrium, using a versatile collisional-radiative model based on analytical rates. <i>Physical Review E</i> , 2009, 80, 056402.	2.1	56
48	Influence of the atomic description and configuration interaction effects on collisional-radiative calculations of low ionized carbon plasmas. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2009, 110, 2191-2207.	2.3	3
49	ABAKO: A new code for population kinetics and radiative properties of plasmas under NLTE conditions. <i>Journal of Physics: Conference Series</i> , 2008, 112, 042008.	0.4	6
50	RAPCAL code: A flexible package to compute radiative properties for optically thin and thick low and high-Z plasmas in a wide range of density and temperature. <i>Laser and Particle Beams</i> , 2008, 26, 433-448.	1.0	45
51	Determination of corona, LTE, and NLTE regimes of optically thin carbon plasmas. <i>Laser and Particle Beams</i> , 2008, 26, 21-32.	1.0	16
52	ABAKO•RAPCAL: A Flexible Computational Package to Perform Radiative Properties Calculations and Diagnostics in a Wide Range of Plasma Conditions. , 2008, , .		0
53	Spectrally Resolved Intensities of Ultra-Dense Hot Aluminum Plasmas. , 2008, , .		1
54	Analysis of time-resolved argon line spectra from OMEGA direct-drive implosions. <i>Review of Scientific Instruments</i> , 2008, 79, 10E310.	1.3	20

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55	Multifrequential and mean opacity calculation of carbon plasmas in a wide range of density and temperature. <i>Journal of Physics: Conference Series</i> , 2008, 112, 042007.	0.4	1
56	Analytical opacity formulas for low Z plasmas. <i>Journal of Physics: Conference Series</i> , 2008, 112, 042006.	0.4	2
57	Detailed-level-accounting approach calculation of radiative properties of aluminium plasmas in a wide range of density and temperature. <i>Journal of Physics: Conference Series</i> , 2008, 112, 042002.	0.4	2
58	Screening effects on the atomic magnitudes of non-hydrogenic ions in strongly coupled plasmas. <i>Physica Scripta</i> , 2007, 76, 418-427.	2.5	9
59	Photoionization cross section of non-hydrogenic levels for weakly coupled plasmas. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2007, 108, 239-255.	2.3	5
60	Code to calculate optical properties for plasmas in a wide range of densities. <i>European Physical Journal Special Topics</i> , 2006, 133, 981-984.	0.2	11
61	Line photon transport in a non-homogeneous plasma using radiative coupling coefficients. <i>European Physical Journal Special Topics</i> , 2006, 133, 993-996.	0.2	2
62	Calculation of optical properties for hot plasmas using a screened hydrogenic model. <i>European Physical Journal Special Topics</i> , 2006, 133, 997-1000.	0.2	0
63	Calculation of opacities and emisivities for carbon plasmas under NLTE and LTE conditions. <i>European Physical Journal Special Topics</i> , 2006, 133, 1005-1008.	0.2	0
64	Relativistic quantum mechanic calculation of photoionization cross-section of hydrogenic and non-hydrogenic states using analytical potentials. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2005, 91, 393-413.	2.3	6
65	Opacities and line transfer in high density plasma. <i>Laser and Particle Beams</i> , 2005, 23, 199-203.	1.0	3
66	Calculation of the radiative opacity of laser-produced plasmas using a relativistic-screened hydrogenic model. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2004, 83, 159-182.	2.3	16
67	A comparison of two atomic models for the radiative properties of dense hot low Z plasmas. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2003, 81, 301-309.	2.3	5
68	Low Z opacities at high densities. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2003, 81, 441-450.	2.3	9
69	Fast calculation of plasma prominent atomic magnitudes by using a new analytical potential for excited configurations. <i>Laser and Particle Beams</i> , 2002, 20, 139-144.	1.0	1
70	Calculation of the ionization state for LTE plasmas using a new relativistic-screened hydrogenic model based on analytical potentials. <i>Laser and Particle Beams</i> , 2002, 20, 145-151.	1.0	4
71	Analytical opacity formulas for ICF elements. <i>Fusion Engineering and Design</i> , 2002, 60, 17-25.	1.9	12
72	An effective analytical potential including plasma effects. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2002, 75, 539-557.	2.3	26

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73	Development of an analytical potential to include excited configurations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2002, 75, 723-739.	2.3	10
74	A screened hydrogenic model using analytical potentials. Journal of Quantitative Spectroscopy and Radiative Transfer, 2002, 72, 575-588.	2.3	16
75	<title>Analytical potential for excited configurations</title>. , 2001, , .		0
76	Scaling law of radiative opacities for ICF elements. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 464, 218-224.	1.6	7
77	<title>Analytical atomic hydrogenic model for calculation of plasma optical properties</title>. , 2001, , .		0
78	Calculation of the ionization state for LTE plasmas using analytical potentials. Laser and Particle Beams, 1999, 17, 635-647.	1.0	2
79	Developments and comparison of two denim opacity models. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 415, 539-542.	1.6	7
80	Opacity calculations of plasmas by using parametric potentials. Laser and Particle Beams, 1996, 14, 631-635.	1.0	2