

# Rafael Rodriguez

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/6379844/publications.pdf>

Version: 2024-02-01

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	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
2	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
3	Mapping natural radioactivity of soils in the eastern Canary Islands. <i>Journal of Environmental Radioactivity</i> , 2017, 166, 242-258.	1.7	40
4	Laboratory unraveling of matter accretion in young stars. <i>Science Advances</i> , 2017, 3, e1700982.	10.3	35
5	BOW SHOCK FRAGMENTATION DRIVEN BY A THERMAL INSTABILITY IN LABORATORY ASTROPHYSICS EXPERIMENTS. <i>Astrophysical Journal</i> , 2015, 815, 96.	4.5	32
6	An effective analytical potential including plasma effects. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2002, 75, 539-557.	2.3	26
7	Counterpropagating Radiative Shock Experiments on the Orion Laser. <i>Physical Review Letters</i> , 2017, 119, 055001.	7.8	24
8	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
9	Structure of a laser-driven radiative shock. <i>High Energy Density Physics</i> , 2015, 17, 106-113.	1.5	21
10	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
11	Analysis of time-resolved argon line spectra from OMEGA direct-drive implosions. <i>Review of Scientific Instruments</i> , 2008, 79, 10E310.	1.3	20
12	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
13	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
14	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
15	Natural radioactivity measurements of beach sands in Gran Canaria, Canary Islands (Spain). <i>Radiation Protection Dosimetry</i> , 2013, 156, 75-86.	0.8	17
16	A screened hydrogenic model using analytical potentials. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2002, 72, 575-588.	2.3	16
17	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
18	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

#	ARTICLE	IF	CITATIONS
19	A new set of relativistic screening constants for the screened hydrogenic model. High Energy Density Physics, 2011, 7, 169-179.	1.5	16
20	Cylindrical liner Z-pinch experiments for fusion research and high-energy-density physics. Journal of Plasma Physics, 2015, 81, .	2.1	16
21	Opacity calculation for target physics using the ABAKO/RAPCAL code. High Energy Density Physics, 2010, 6, 57-65.	1.5	13
22	Influence of atomic kinetics in the simulation of plasma microscopic properties and thermal instabilities for radiative bow shock experiments. Physical Review E, 2017, 95, 033201.	2.1	13
23	Analytical opacity formulas for ICF elements. Fusion Engineering and Design, 2002, 60, 17-25.	1.9	12
24	Experimental study of the interaction of two laser-driven radiative shocks at the PALS laser. High Energy Density Physics, 2017, 23, 20-30.	1.5	12
25	Counter-propagating radiative shock experiments on the Orion laser and the formation of radiative precursors. High Energy Density Physics, 2017, 23, 60-72.	1.5	12
26	Radiative properties for astrophysical plasma mixtures in nonlocal thermodynamic equilibrium. Physical Review E, 2018, 98, .	2.1	11
27	Code to calculate optical properties for plasmas in a wide range of densities. European Physical Journal Special Topics, 2006, 133, 981-984.	0.2	11
28	Development of an analytical potential to include excited configurations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2002, 75, 723-739.	2.3	10
29	Parametrization of Mean Radiative Properties of Optically Thin Steady-State Plasmas and Applications. Communications in Computational Physics, 2014, 16, 612-631.	1.7	10
30	Low Z opacities at high densities. Journal of Quantitative Spectroscopy and Radiative Transfer, 2003, 81, 441-450.	2.3	9
31	Screening effects on the atomic magnitudes of non-hydrogenic ions in strongly coupled plasmas. Physica Scripta, 2007, 76, 418-427.	2.5	9
32	Collisional-radiative simulations of a supersonic and radiatively cooled aluminum plasma jet. High Energy Density Physics, 2015, 17, 74-84.	1.5	8
33	Developments and comparison of two density opacity models. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 415, 539-542.	1.6	7
34	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
35	Effects of radiation in accretion regions of classical T Tauri stars. Astronomy and Astrophysics, 2019, 629, L9.	5.1	7
36	Relativistic quantum mechanic calculation of photoionization cross-section of hydrogenic and non-hydrogenic states using analytical potentials. Journal of Quantitative Spectroscopy and Radiative Transfer, 2005, 91, 393-413.	2.3	6

#	ARTICLE	IF	CITATIONS
37	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
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 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
40	Relativistic screened hydrogenic radial integrals. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2013, 117, 123-132.	2.3	6
41	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
42	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
43	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
44	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
45	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
46	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
47	Determination and Analysis of the Thermodynamic Regimes of Xenon Plasmas. <i>Contributions To Plasma Physics</i> , 2011, 51, 863-876.	1.1	5
48	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
49	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
50	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
51	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
52	Energy loss of Fe ions in He plasmas at different thermodynamic states. <i>Physics of Plasmas</i> , 2018, 25, 093113.	1.9	4
53	Non-LTE radiation hydrodynamics in PLUTO. <i>Astronomy and Astrophysics</i> , 2019, 631, A41.	5.1	4
54	Opacities and line transfer in high density plasma. <i>Laser and Particle Beams</i> , 2005, 23, 199-203.	1.0	3

#	ARTICLE	IF	CITATIONS
55	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
56	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
57	Opacity calculations of plasmas by using parametric potentials. <i>Laser and Particle Beams</i> , 1996, 14, 631-635.	1.0	2
58	Calculation of the ionization state for LTE plasmas using analytical potentials. <i>Laser and Particle Beams</i> , 1999, 17, 635-647.	1.0	2
59	Analytical opacity formulas for low Z plasmas. <i>Journal of Physics: Conference Series</i> , 2008, 112, 042006.	0.4	2
60	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
61	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
62	Stopping power of a helium plasma under LTE or NLTE conditions. <i>Laser and Particle Beams</i> , 2018, 36, 442-447.	1.0	2
63	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
64	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
65	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
66	Spectrally Resolved Intensities of Ultra-Dense Hot Aluminum Plasmas. , 2008, , .		1
67	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
68	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
69	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
70	<title>Analytical potential for excited configurations</title>. , 2001, , .		0
71	<title>Analytical atomic hydrogenic model for calculation of plasma optical properties</title>. , 2001, , .		0
72	ABAKO-RAPCAL: A Flexible Computational Package to Perform Radiative Properties Calculations and Diagnostics in a Wide Range of Plasma Conditions. , 2008, , .		0

#	ARTICLE	IF	CITATIONS
73	Analytical expressions for radiative opacities of low Z plasmas. Journal of Physics: Conference Series, 2010, 244, 042002.	0.4	0
74	Opacity calculations for ICF target physics using the ABAKO/RAPCAL code. Journal of Physics: Conference Series, 2010, 244, 042003.	0.4	0
75	Atomic Physics Modeling and Applications for ICF Plasmas. Plasma and Fusion Research, 2013, 8, 3404056-3404056.	0.7	0
76	Time-dependent and radiation field effects on collisional-radiative simulations of radiative properties of blast waves launched in clusters of xenon. High Energy Density Physics, 2015, 17, 119-128.	1.5	0
77	Generation and Parametrization of Mean Plasma Radiative Properties Databases for Astrophysics and Nuclear Fusion Applications. International Journal of Computational Methods, 2020, 17, 1940003.	1.3	0
78	Simulation of Plasma Microscopy Properties and Ion Beam-Plasma Interaction Processes in Plasmas by Using MIXKIP/RAPCAL/STOPP CODE. International Journal of Computational Methods, 2020, 17, 1940009.	1.3	0
79	Calculation of optical properties for hot plasmas using a screened hydrogenic model. European Physical Journal Special Topics, 2006, 133, 997-1000.	0.2	0
80	Calculation of opacities and emissivities for carbon plasmas under NLTE and LTE conditions. European Physical Journal Special Topics, 2006, 133, 1005-1008.	0.2	0