Dave Kilcrease

List of Publications by Year
in descending order

83 papers	1,901 citations	331670 21 h-index	276875 41 g-index
85 all docs	85 docs citations	85 times ranked	1408 citing authors

#	Article	IF	Citations
1	Introduction to spectral line shape theory. Journal of Physics B: Atomic, Molecular and Optical Physics, 2022, 55, 034002.	1.5	8
2	All-Order Full-Coulomb Quantum Spectral Line-Shape Calculations. Physical Review Letters, 2021, 127, 235001.	7.8	13
3	Effect of Electron Capture on Spectral Line Broadening in Hot Dense Plasmas. Physical Review Letters, 2020, 124, 055003.	7.8	16
4	Laser-driven production of the antihydrogen molecular ion. Physical Review A, 2019, 100, .	2.5	9
5	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
6	New Los Alamos Opacity Calculations. Atoms, 2018, 6, 32.	1.6	4
7	Matrix Methods for Solving Hartree-Fock Equations in Atomic Structure Calculations and Line Broadening. Atoms, 2018, 6, 22.	1.6	4
8	Density-matrix correlations in the relaxation theory of electron broadening. Physical Review A, 2018, 98, .	2.5	8
9	Kinetic equations for cylindrically symmetric plasmas including atomic coherence and Coulomb potential effects. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 095701.	1.5	0
10	A new generation of Los Alamos opacity tables. AIP Conference Proceedings, 2017, , .	0.4	2
11	Laser-induced breakdown spectroscopy of light water reactor simulated used nuclear fuel: Main oxide phase. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2017, 133, 26-33.	2.9	21
12	Phase discrimination of uranium oxides using laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2017, 134, 91-97.	2.9	22
13	Optical properties of highly compressed polystyrene: An ab initio study. Physical Review B, 2017, 96, .	3.2	22
14	Interpretation of the BRITE oscillation data of the hybrid pulsator Î½ÂEridani: a call for the modification of stellar opacities. Monthly Notices of the Royal Astronomical Society, 2017, 466, 2284-2293.	4.4	38
15	State-resolved Photodissociation and Radiative Association Data for the Molecular Hydrogen Ion. Astrophysical Journal, 2017, 851, 64.	4.5	13
16	Inversions of the Ledoux discriminant: a closer look at the tachocline. Monthly Notices of the Royal Astronomical Society: Letters, 2017, 472, L70-L74.	3.3	10
17	Seismic inversion of the solar entropy. Astronomy and Astrophysics, 2017, 607, A58.	5.1	15
18	Model uncertainties of local-thermodynamic-equilibrium K-shell spectroscopy. High Energy Density Physics, 2016, 20, 17-22.	1.5	21

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19	Analysis of geological materials containing uranium using laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2016, 120, 1-8.	2.9	40
20	Experimental and theoretical studies of laser-induced breakdown spectroscopy emission from iron oxide: Studies of atmospheric effects. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2016, 122, 85-92.	2.9	8
21	Effect of higher-order multipole moments on the Stark line shape. Physical Review A, 2016, 94, .	2.5	26
22	DETAILED OPACITY COMPARISON FOR AN IMPROVED STELLAR MODELING OF THE ENVELOPES OF MASSIVE STARS. Astrophysical Journal, 2016, 823, 78.	4.5	14
23	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
24	Theoretical and experimental investigation of matrix effects observed in emission spectra of binary mixtures of sodium and copper and magnesium and copper pressed powders. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2016, 122, 142-148.	2.9	7
25	A NEW GENERATION OF LOS ALAMOS OPACITY TABLES. Astrophysical Journal, 2016, 817, 116.	4.5	153
26	The creation, destruction, and transfer of multipole moments in electronâ€“ion three-body recombination using the Gell-Mannâ€“Goldbergerâ€“Watson method. Journal of Physics B: Atomic, Molecular and Optical Physics, 2016, 49, 055202.	1.5	0
27	Laser-induced breakdown spectroscopy using mid-infrared femtosecond pulses. Journal of Applied Physics, 2015, 118, 043107.	2.5	11
28	Wider pulsation instability regions forÎ²Cephei and SPB stars calculated using new Los Alamos opacities. Astronomy and Astrophysics, 2015, 580, L9.	5.1	31
29	The Los Alamos suite of relativistic atomic physics codes. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 144014.	1.5	122
30	A higher-than-predicted measurement of iron opacity at solar interior temperatures. Nature, 2015, 517, 56-59.	27.8	321
31	The creation, destruction and transfer of multipole moments in electronâ€“ion three-body recombination. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 035001.	1.5	0
32	Theoretical modeling and analysis of the emission spectra of a ChemCam standard: Basalt BIR-1A. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2015, 110, 20-30.	2.9	8
33	Relativistic opacities for astrophysical applications. High Energy Density Physics, 2015, 16, 53-59.	1.5	52
34	An equation of state for partially ionized plasmas: The Coulomb contribution to the free energy. High Energy Density Physics, 2015, 16, 36-40.	1.5	15
35	Improved electron collisional line broadening for low-temperature ions and neutrals in plasma modeling. Journal of Physics B: Atomic, Molecular and Optical Physics, 2014, 48, 224009.	1.5	7
36	X-ray spectroscopic diagnostics and modeling of polar-drive implosion experiments on the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	13

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37	Ab-initio modeling of an iron laser-induced plasma: Comparison between theoretical and experimental atomic emission spectra. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2014, 97, 65-73.	2.9	15
38	Ab initio calculation of the non-relativistic freeâ€"free Gaunt factor incorporating plasma screening. High Energy Density Physics, 2014, 10, 61-69.	1.5	13
39	The creation, destruction, and transfer of multipole moments in electron- and proton-impact ionization of atoms and ions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2013, 46, 245202.	1.5	1
40	Light element opacities from ATOMIC. High Energy Density Physics, 2013, 9, 369-374.	1.5	41
41	Radiative properties of stellar envelopes: Comparison of asteroseismic results to opacity calculations and measurements for iron and nickel. High Energy Density Physics, 2013, 9, 473-479.	1.5	22
42	Light element opacities of astrophysical interest from ATOMIC. , 2013, , .		0
43	Creation, destruction, and transfer of atomic multipole moments by electron scattering: Liouville-space formulation. Journal of Physics B: Atomic, Molecular and Optical Physics, 2013, 46, 085202.	1.5	2
44	Iron and Nickel spectral opacity calculations in conditions relevant for pulsating stellar envelopes and experiments. EPJ Web of Conferences, 2013, 59, 14003.	0.3	2
45	Interaction of configuration in spectral opacity calculations for stellar physics. EAS Publications Series, 2012, 58, 51-55.	0.3	4
46	The creation, destruction and transfer of multipole moments in electron scattering by ions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2012, 45, 105202.	1.5	10
47	Atomic Data and the Modeling of Supernova Light Curves. Journal of Physics: Conference Series, 2012, 388, 012022.	0.4	0
48	Creation, destruction, and transfer of atomic multipole moments by electron scattering: relativistic treatment¹This article is part of a Special Issue on the 10th International Colloquium on Atomic Spectra and Oscillator Strengths for Astrophysical and Laboratory Plasmas.. Canadian Journal of Physics, 2011, 89, 521-531.	1.1	3
49	Theoretical and experimental activities on opacities for a good interpretation of seismic stellar probes. Journal of Physics: Conference Series, 2011, 271, 012035.	0.4	11
50	Radiative properties of stellar plasmas and open challenges. Astrophysics and Space Science, 2011, 336, 103-109.	1.4	15
51	Comparison of Fe and Ni opacity calculations for a better understanding of pulsating stellar envelopes. High Energy Density Physics, 2011, 7, 312-319.	1.5	32
52	Orbital-free molecular dynamics simulations of transport properties in dense-plasma uranium. High Energy Density Physics, 2011, 7, 155-160.	1.5	18
53	Quantum molecular dynamics simulations of transport properties in liquid and dense-plasma plutonium. Physical Review E, 2011, 83, 026404.	2.1	38
54	The derivation of kinetic equations for anisotropic plasmas from the impact approximation. Journal of Physics B: Atomic, Molecular and Optical Physics, 2011, 44, 215701.	1.5	8

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55	Non-LTE and gradient effects in K-shell oxygen emission laser-produced plasma. High Energy Density Physics, 2010, 6, 295-300.	1.5	8
56	NLTE Opacities of Mid- and High-Z Cocktails. , 2009, , .		0
57	Early Solar Mass Loss, Opacity Uncertainties, and the Solar Abundance Problem. , 2009, , .		3
58	The reduced detailed configuration accounting (RDCA) model for NLTE plasma spectral calculations. High Energy Density Physics, 2009, 5, 204-207.	1.5	10
59	Creation, destruction, and transfer of atomic multipole moments by electron scattering: Quantum mechanical treatment. Journal of Physics: Conference Series, 2009, 194, 042002.	0.4	0
60	Putting things on the energy shell. American Journal of Physics, 2008, 76, 1070-1071.	0.7	0
61	Creation, destruction, and transfer of atomic multipole moments by electron scattering: Quantum-mechanical treatment. Physical Review A, 2008, 78, .	2.5	10
62	Spectral line strength binning method for opacity calculations. High Energy Density Physics, 2007, 3, 309-313.	1.5	9
63	Statistical mean-field theory of finite quantum systems: canonical ensemble formulation. Journal of Physics A, 2006, 39, L499-L505.	1.6	2
64	The new Los Alamos opacity code ATOMIC. Journal of Quantitative Spectroscopy and Radiative Transfer, 2006, 99, 265-271.	2.3	94
65	Using semiclassical models for electron broadening and line shift calculations of and dipole transitions. Journal of Quantitative Spectroscopy and Radiative Transfer, 2006, 99, 255-264.	2.3	2
66	Coupled electron and atomic kinetics through the solution of the Boltzmann equation for generating time-dependent X-ray spectra. Journal of Quantitative Spectroscopy and Radiative Transfer, 2006, 99, 584-594.	2.3	3
67	Los Alamos Opacities: Transition from LEDCOP to ATOMIC. AIP Conference Proceedings, 2004, , .	0.4	37
68	CHEMEOS: A New Chemical-Picture-Based Model for Plasma Equation-of-State Calculations. AIP Conference Proceedings, 2004, , .	0.4	18
69	Model comparisons for high-Z non-LTE steady-state calculations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2001, 71, 107-116.	2.3	32
70	Photoabsorption in hot, dense plasmasâ€"the average atom, the spherical cell model and the random phase approximation II. Journal of Quantitative Spectroscopy and Radiative Transfer, 2001, 71, 273-280.	2.3	3
71	Plasma non-ideality effects on the photonâ€"electron scattering contribution to radiative opacities. Journal of Quantitative Spectroscopy and Radiative Transfer, 2001, 71, 445-453.	2.3	21
72	X3D Moving Grid Methods for Semiconductor Applications. VLSI Design, 1998, 8, 117-121.	0.5	1

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73	Dense plasma microfield nonuniformity. Physical Review E, 1997, 55, 6289-6292.	2.1	15
74	Various applications of atomic physics and kinetics codes to plasma modeling. AIP Conference Proceedings, 1996, , .	0.4	8
75	High-resolution x-ray spectroscopy of a subpicosecond-laser-produced silicon plasma. Physical Review A, 1995, 51, 3529-3533.	2.5	24
76	Plasma electric microfields for differing electron and ion temperatures. Journal of Quantitative Spectroscopy and Radiative Transfer, 1994, 51, 161-167.	2.3	10
77	Stark broadened profiles with self-consistent radiation transfer and atomic kinetics in plasmas produced by high intensity lasers. Journal of Quantitative Spectroscopy and Radiative Transfer, 1994, 51, 255-261.	2.3	2
78	Ion broadening of dense-plasma spectral lines including field-dependent atomic physics and the ion quadrupole interaction. Physical Review E, 1993, 48, 3901-3913.	2.1	21
79	Atomic configuration average simulations for plasma spectroscopy. Journal of Physics B: Atomic, Molecular and Optical Physics, 1993, 26, L717-L723.	1.5	23
80	Calculational aspects of the Stark line broadening of multielectron ions in plasmas. Computer Physics Communications, 1991, 63, 314-322.	7.5	91
81	Time-resolved spectroscopic measurements of high density in Ar-filled microballoon implosions. Physical Review Letters, 1989, 63, 267-270.	7.8	43
82	Analysis Of K- And L-Shell Spectra Emitted From Implosions Of Argon Filled And Argon/Krypton Filled Microballoons. Proceedings of SPIE, 1988, , .	0.8	7
83	Magnetized fuel inertial confinement fusion. Nuclear Fusion, 1988, 28, 1465-1468.	3.5	14