

# Marianna S Safronova

## List of Publications by Year in descending order

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155  
papers

6,837  
citations

87723

38  
h-index

64668

79  
g-index

156  
all docs

156  
docs citations

156  
times ranked

4013  
citing authors

#	ARTICLE	IF	CITATIONS
1	Search for new physics with atoms and molecules. <i>Reviews of Modern Physics</i> , 2018, 90, .	16.4	902
2	Systematic evaluation of an atomic clock at $2 \text{ \AA} - 10^{-18}$ total uncertainty. <i>Nature Communications</i> , 2015, 6, 6896.	5.8	584
3	Theory and applications of atomic and ionic polarizabilities. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2010, 43, 202001.	0.6	395
4	High-Precision Calculations of Dispersion Coefficients, Static Dipole Polarizabilities, and Atom-Wall Interaction Constants for Alkali-Metal Atoms. <i>Physical Review Letters</i> , 1999, 82, 3589-3592.	2.9	318
5	Spectroscopic observation of SU( <i>N</i> )-symmetric interactions in Sr orbital magnetism. <i>Science</i> , 2014, 345, 1467-1473.	6.0	290
6	Relativistic many-body calculations of energy levels, hyperfine constants, electric-dipole matrix elements, and static polarizabilities for alkali-metal atoms. <i>Physical Review A</i> , 1999, 60, 4476-4487.	1.0	278
7	Relativistic many-body calculations of the energies of $n=2$ states for the berylliumlike isoelectronic sequence. <i>Physical Review A</i> , 1996, 53, 4036-4053.	1.0	176
8	Highly charged ions: Optical clocks and applications in fundamental physics. <i>Reviews of Modern Physics</i> , 2018, 90, .	16.4	175
9	Optical clock comparison for Lorentz symmetry testing. <i>Nature</i> , 2019, 567, 204-208.	13.7	147
10	Development of a configuration-interaction plus all-order method for atomic calculations. <i>Physical Review A</i> , 2009, 80, .	1.0	127
11	Alkaline-Earth Atoms in Optical Tweezers. <i>Physical Review X</i> , 2018, 8, .	2.8	125
12	Critically evaluated theoretical energies, lifetimes, hyperfine constants, and multipole polarizabilities in $^{87}\text{Rb}$ . <i>Physical Review A</i> , 2011, 83, .	1.0	107
13	Blackbody-radiation shift in the Sr optical atomic clock. <i>Physical Review A</i> , 2013, 87, .	1.0	103
14	All-Order Methods for Relativistic Atomic Structure Calculations. <i>Advances in Atomic, Molecular and Optical Physics</i> , 2008, 55, 191-233.	2.3	99
15	Precision Calculation of Blackbody Radiation Shifts for Optical Frequency Metrology. <i>Physical Review Letters</i> , 2011, 107, 143006.	2.9	95
16	Highly Charged Ions for Atomic Clocks, Quantum Information, and Search for $I_{\pm}$ variation. <i>Physical Review Letters</i> , 2014, 113, 030801. <a href="#">Multipole polarizabilities, oscillator strengths, lifetimes, hyperfine constants, and excitation energies in Ca</a>	2.9	93
17	constants, and excitation energies in Ca. <i>Physical Review A</i> , 2011, 83, .	1.0	86
18	Michelson-Morley analogue for electrons using trapped ions to test Lorentz symmetry. <i>Nature</i> , 2015, 517, 592-595.	13.7	86

#	ARTICLE	IF	CITATIONS
19	Relativistic many-body calculations of energy levels, hyperfine constants, and transition rates for sodiumlike ions, $Z=11$ . Physical Review A, 1998, 58, 1016-1028.	1.0	85
20	Relativistic many-body calculations of energies of $n=2$ states for boronlike ions. Physical Review A, 1996, 54, 2850-2862.	1.0	74
21	Tune-out wavelengths of alkali-metal atoms and their applications. Physical Review A, 2011, 84, .	1.0	72
22	Precision Measurement of Transition Matrix Elements via Light Shift Cancellation. Physical Review Letters, 2012, 109, 243003.	2.9	68
23	Blackbody-radiation shift in a $^{88}\text{Sr}$ ion optical frequency standard. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 154020.	0.6	67
24	Probing Sizes and Shapes of Nobelium Isotopes by Laser Spectroscopy. Physical Review Letters, 2018, 120, 232503.	2.9	63
25	Relativistic Many-Body Calculations of Transition Probabilities for the $21\text{I}2\text{I}2[\text{LS}]-21\text{I}3\text{I}4[\text{L}'\text{S}'\text{J}']$ Lines in Be-like Ions. Physica Scripta, 1999, 59, 286-295.	1.2	61
26	Strongly enhanced effects of Lorentz symmetry violation in entangled $\text{Yb}^+$ ions. Nature Physics, 2016, 12, 465-468.	6.5	59
27	Nuclear clocks for testing fundamental physics. Quantum Science and Technology, 2021, 6, 034002.	2.6	58
28	Two Clock Transitions in Neutral Yb for the Highest Sensitivity to Variations of the Fine-Structure Constant. Physical Review Letters, 2018, 120, 173001.	2.9	56
29	Electric Dipole Moment Enhancement Factor of Thallium. Physical Review Letters, 2012, 108, 173001.	2.9	51
30	Magic wavelengths for optical cooling and trapping of lithium. Physical Review A, 2012, 86, .	1.0	48
31	Towards a Mg Lattice Clock: Observation of the $S$ variation. Physical Review Letters, 2015, 115, 240801.	2.9	48
32	Probing the relaxed relaxation at the luminosity and precision frontiers. Journal of High Energy Physics, 2020, 2020, 1.	1.6	45
33	Ytterbium in Quantum Gases and Atomic Clocks: van der Waals Interactions and Blackbody Shifts. Physical Review Letters, 2012, 109, 230802.	2.9	44
34	Highly charged Ag-like and In-like ions for the development of atomic clocks and the search for $\hat{\pm}$ variation. Physical Review A, 2014, 90, .	1.0	44
35	Nuclear Magnetic Moment of $^{210}\text{Fr}$ : A Combined Theoretical and Experimental Approach. Physical Review Letters, 2008, 100, 172502.	2.9	41
36	Excitation energies, polarizabilities, multipole transition rates, and lifetimes of ions along the francium isoelectronic sequence. Physical Review A, 2007, 76, .	1.0	40

#	ARTICLE	IF	CITATIONS
37	High-precision measurements of the $\lambda_{\text{line-out}}$ of the $^{87}\text{Rb}$ $D$ -line transition wavelength. Physical Review A, 2015, 92, .	1.0	40
38	Relativistic many-body calculations of energies of $n=3$ states of Be-like ions. Journal of Physics B: Atomic, Molecular and Optical Physics, 1997, 30, 2375-2393.	0.6	39
39	Quantum Electrodynamical Shifts in Multivalent Heavy Ions. Physical Review Letters, 2016, 117, 253001.	2.9	38
40	Narrow-line Cooling and Determination of the Magic Wavelength of Cd. Physical Review Letters, 2019, 123, 113201.	2.9	37
41	New Methods for Testing Lorentz Invariance with Atomic Systems. Physical Review Letters, 2018, 120, 103202.	2.9	36
42	Third-order relativistic many-body calculations of energies, transition rates, hyperfine constants, and blackbody radiation shift in $^{171}\text{Yb}$ . Physical Review A, 2009, 79, .	1.0	35
43	Magnetic dipole and electric quadrupole moments of the $^{229}\text{Th}$ nucleus. Physical Review A, 2013, 88, .	1.0	34
44	High-accuracy calculation of energies, lifetimes, hyperfine constants, multipole polarizabilities, and blackbody radiation shift in $^{133}\text{Cs}$ . Physical Review A, 2008, 78, .	1.0	33
45	Atomic properties of Cd-like and Sn-like ions for the development of frequency standards and search for the variation of the fine-structure constant. Physical Review A, 2014, 90, .	1.0	33
46	Magic wavelengths, matrix elements, polarizabilities, and lifetimes of Cs. Physical Review A, 2016, 94, .	1.0	33
47	State-Dependent Optical Lattices for the Strontium Optical Qubit. Physical Review Letters, 2020, 124, 203201.	2.9	33
48	Blackbody radiation shifts in optical atomic clocks. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 439-447.	1.7	32
49	Level-crossing spectroscopy of the $7s$ , $9s$ , and $10d$ states of $^{133}\text{Cs}$ and validation of relativistic many-body calculations of the polarizabilities and hyperfine constants. Physical Review A, 2007, 75, .	1.0	30
50	Long-range interaction coefficients for ytterbium dimers. Physical Review A, 2014, 89, .	1.0	30
51	The Search for Variation of Fundamental Constants with Clocks. Annalen Der Physik, 2019, 531, 1800364.	0.9	30
52	Ultracold Anions for High-Precision Antihydrogen Experiments. Physical Review Letters, 2018, 120, 133205.	2.9	29
53	Black-body radiation shifts and theoretical contributions to atomic clock research. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2010, 57, 94-105.	1.7	28
54	High Resolution Photoexcitation Measurements Exacerbate the Long-Standing Fe XVII Oscillator Strength Problem. Physical Review Letters, 2020, 124, 225001.	2.9	25

#	ARTICLE	IF	CITATIONS
55	Accurate Prediction of Clock Transitions in a Highly Charged Ion with Complex Electronic Structure. Physical Review Letters, 2020, 124, 163001.	2.9	25
56	Atomic properties of $\text{Lu}^{20+}$ . Physical Review A, 2016, 93, .	1.0	21
57	Relativistic many-body calculations of energies, E2, and M1 transition rates of 4s24p states in Ga-like ions. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 348, 293-298.	0.9	23
58	Blackbody radiation shift in the Rb87 frequency standard. Physical Review A, 2010, 82, .	1.0	23
59	Polarizabilities of $\text{Si}^2+$ . A benchmark test of theory and experiment. Physical Review A, 2012, 85, .	1.0	23
60	Polarizabilities, Stark shifts, and lifetimes of the In atom. Physical Review A, 2013, 87, .	1.0	23
61	Relativistic all-order calculations of Th, and properties. Physical Review A, 2014, 89, .	1.0	22
62	Extracting transition rates from zero-polarizability spectroscopy. Physical Review A, 2015, 92, .	1.0	21
63	Multipolar Polarizabilities and Hyperpolarizabilities in the Sr Optical Lattice Clock. Physical Review Letters, 2018, 120, 063204.	2.9	21
64	Dielectronic satellite spectra of the 1s3p-1s2 lines for highly-charged ions with Z= 6-54 (1s2l3l'-1s2l2l' transitions). Physica Scripta, 1995, 51, 471-483.	1.2	20
65	Correlation effects in Yb $\text{Si}^2+$ and implications for parity violation. Physical Review A, 2012, 86, .	1.0	20
66	Magic wavelengths for optical cooling and trapping of potassium. Physical Review A, 2013, 87, .	1.0	20
67	Actinide ions for testing the spatial $\hat{I} \pm$ -variation hypothesis. Physical Review A, 2015, 92, .	1.0	20
68	Suppressing Inhomogeneous Broadening in a Lutetium Multi-ion Optical Clock. Physical Review Letters, 2019, 123, 063201.	2.9	20
69	Correlation, relativistic and radiative effects for the energy levels of 1s22s22p5nl, 1s22s2p5nl(n=) Tj ETQq1 1 0.784314 rgBT /Overlock 1.2 19	1.2	19
70	Frequency shifts due to Stark effects on a rubidium two-photon transition. Physical Review A, 2019, 100, .	1.0	19
71	Relativistic all-order many-body calculation of energies, wavelengths, and $M1$ and $E2$ transition rates for the $\text{He}^{2+}$ . Physical Review A, 2019, 100, .	1.0	18
72	Relative intensity of dielectronic satellite spectra for highly charged He-like ions (1s2l"nl-1s2n'l', n,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 0.6 17	0.6	17











#	ARTICLE	IF	CITATIONS
127	Correlation and relativistic effects in actinide ions. Physical Review A, 2011, 84, .	1.0	6
128	Magic wavelength of the Ba+138 6s S1/2 <sup>2</sup> â€“5d D5/2 clock transition. Physical Review A, 2020, 101, .	1.0	6
129	Effective three-particle forces in polyvalent atoms. Physical Review A, 2016, 94, .	1.0	5
130	High-precision measurements and theoretical calculations of indium excited-state polarizabilities. Physical Review A, 2018, 97, .	1.0	5
131	Measurement of the $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle$ $\langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 7 \langle \text{mml:mn} \rangle \langle \text{mml:mi} \rangle p \langle \text{mml:mi} \rangle \langle \text{mml:mpace} \text{width="0.16em"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle P \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 3 \langle \text{mml:mn} \rangle \langle \text{mml:mo} \rangle / \langle \text{mml:mo} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle Ra \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mo} \rangle + \langle \text{mml:mo} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle Ra \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mo} \rangle + \langle \text{mml:mo} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle Ra \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mo} \rangle + \langle \text{mml:mo} \rangle$ state branching fractions in $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle$ $\langle \text{mml:msup} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle Ra \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mo} \rangle + \langle \text{mml:mo} \rangle$	1.0	5
132	Visible spectra of heavy ions with an open 4f shell. X-Ray Spectrometry, 2020, 49, 200-203.	0.9	5
133	Experimental and theoretical study of the $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \text{display="inline"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle n \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle f \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ -level lifetimes of potassium. Physical Review A, 2008, 77, .	1.0	4
134	In search of the nuclear clock. Nature Physics, 2018, 14, 198-198.	6.5	4
135	Atomic properties of actinide ions with particle-hole configurations. Physical Review A, 2018, 97, .	1.0	4
136	Observation of an Electric Quadrupole Transition in a Negative Ion: Experiment and Theory. Physical Review Letters, 2021, 126, 083001.	2.9	4
137	Relativistic many-body calculation of energies, multipole transition rates, and lifetimes in tungsten ions. Physical Review A, 2017, 95, .	1.0	4
138	Magic wavelengths of the Yb (6s2 S01 <sup>2</sup> â€“6s6p P13) intercombination transition. Physical Review A, 2020, 102, .	1.0	4
139	Measurement of the tune-out wavelength for $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mi} \rangle Cs \langle \text{mml:mi} \rangle \langle \text{mml:mprescripts} \rangle \langle \text{mml:none} \rangle / \rangle \langle \text{mml:mn} \rangle 133 \langle \text{mml:mn} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:math} \rangle$ at 880Ånm. Physical Review A, 2021, 104, .	1.0	4
140	Laser spectroscopy of the $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle y \langle \text{mml:mi} \rangle \langle \text{mml:mpace} \text{width="4pt"} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mi} \rangle P \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle J \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle o \langle \text{mml:mi} \rangle \langle \text{mml:mprescripts} \rangle \langle \text{mml:none} \rangle / \rangle \langle \text{mml:mn} \rangle 7 \langle \text{mml:mn} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:math} \rangle$ states of Cr i. Physical Review A, 2022, 105, .	1.0	4
141	Atomic Clocks: The Search for Variation of Fundamental Constants with Clocks (Ann. Phys. 5/2019). Annalen Der Physik, 2019, 531, 1970023.	0.9	3
142	High-precision measurement and ab initio calculation of the (6s26p2)âˆš3P0 <sup>2</sup> â†’3P2 electric-quadrupole-transition amplitude in Pb208. Physical Review A, 2019, 100, .	1.0	3
143	Quantum technologies and the elephants. Quantum Science and Technology, 2021, 6, 040401. Precision measurement of the $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mi} \rangle D \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 1 \langle \text{mml:mn} \rangle \langle \text{mml:none} \rangle / \rangle \langle \text{mml:mprescripts} \rangle \langle \text{mml:none} \rangle / \rangle \langle \text{mml:mn} \rangle 3 \langle \text{mml:mn} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:math} \rangle$ and	2.6	3
144	$\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mi} \rangle D \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:none} \rangle / \rangle \langle \text{mml:mprescripts} \rangle \langle \text{mml:none} \rangle / \rangle \langle \text{mml:mn} \rangle 3 \langle \text{mml:mn} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:math} \rangle$ quadrupol	1.0	2

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145	Hyperfine-mediated effects in a $^{171}\text{Yb}^+$ optical clock. Physical Review A, 2020, 102, .	1.0	2
146	Role of triple excitations in calculating different properties of Ba+. Physical Review A, 2021, 103, .	1.0	2
147	Magic wavelengths of the Sr ( $5s^2S_0 \rightarrow 5s5p^3P_1$ ) intercombination transition near the $5s5p^3P_1 \rightarrow 5p^2P_{1/2}$ transition. Physical Review A, 2022, 105, .	1.0	2
148	Z-dependences of atomic parameters of autoionization states of two-electron systems. Soviet Physics Journal (English Translation of Izvestiia Vysshikh Uchebnykh Zavedenii, Fizika), 1990, 33, 670-684.	0.0	1
149	Relativistic many-body calculation of energies, lifetimes, polarizabilities, blackbody radiative shift, and hyperfine constants in $^{171}\text{Yb}^+$ . Physical Review A, 2016, 94, .	1.0	1
150	Low-lying energy levels of $^{229}\text{Th}^{35+}$ and the electronic bridge process. Quantum Science and Technology, 2021, 6, 034014.	2.6	1
151	Mass spectrometry for future atomic clocks. Nature, 2020, 581, 35-36.	13.7	1
152	Coherent effects in Cs (nD) states in the presence of an external electric field. , 2007, , .		0
153	Blackbody radiation shifts and theoretical contributions to atomic clock research. , 2009, , .		0
154	ATOMIC PNC THEORY: CURRENT STATUS AND FUTURE PROSPECTS. , 2009, , .		0
155	Atomic calculations for future technology and study of fundamental problems. , 2012, , .		0