

Savely G Karshenboim

List of Publications by Year in descending order

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166
papers

3,842
citations

147566

31
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54
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173
all docs

173
docs citations

173
times ranked

1638
citing authors

#	ARTICLE	IF	CITATIONS
1	Precision physics of simple atoms: QED tests, nuclear structure and fundamental constants. Physics Reports, 2005, 422, 1-63.	10.3	315
2	Limit on the Present Temporal Variation of the Fine Structure Constant. Physical Review Letters, 2004, 93, 170801.	2.9	252
3	The CODATA 2017 values of $\langle i \rangle h$, $\langle i \rangle e$, $\langle i \rangle k$, and $\langle i \rangle N_A$ for the revision of the SI. Metrologia, 2018, 55, L13-L16.	0.6	228
4	New Determination of the Electron's Mass. Physical Review Letters, 2001, 88, 011603.	2.9	187
5	PRECISION STUDY OF POSITRONIUM: TESTING BOUND STATE QED THEORY. International Journal of Modern Physics A, 2004, 19, 3879-3896.	0.5	101
6	Some possibilities for laboratory searches for variations of fundamental constants. Canadian Journal of Physics, 2000, 78, 639-678.	0.4	98
7	The Lamb shift of excited S-levels in hydrogen and deuterium atoms. Zeitschrift für Physik D-Atoms Molecules and Clusters, 1997, 39, 109-113.	1.0	64
8	Nuclear structure-dependent radiative corrections to the hydrogen hyperfine splitting. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 225, 97-106.	0.9	60
9	Precision Physics of Simple Atoms and Constraints on a Light Boson with Ultraweak Coupling. Physical Review Letters, 2010, 104, 220406.	2.9	57
10	Non-relativistic calculations of the g-factor of a bound electron. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 266, 380-386.	0.9	56
11	High-Precision Optical Measurement of the $2S$ Hyperfine Interval in Atomic Hydrogen. Physical Review Letters, 2004, 92, 033003.	2.9	56
12	Virtual light-by-light scattering and the g-factor of a bound electron. Physical Review A, 2005, 71, .	1.0	56
13	Vacuum polarization in a hydrogen-like relativistic atom: g factor of a bound electron. Journal of Experimental and Theoretical Physics, 2001, 93, 477-484.	0.2	53
14	Higher-order recoil corrections to energy levels of two-body systems. Physical Review A, 1999, 60, 2792-2798.	1.0	52
15	Analytic calculation of radiative-recoil corrections to muonium hyperfine splitting: Electron-line contribution. Annals of Physics, 1991, 205, 231-290.	1.0	48
16	Complete Results for Positronium Energy Levels at Order m^{-6} . Physical Review Letters, 1998, 80, 2101-2104.	2.9	48
17	Constraints on muon-specific dark forces. Physical Review D, 2014, 90, .	1.6	48
18	Two-loop logarithmic corrections in the hydrogen Lamb shift. Journal of Physics B: Atomic, Molecular and Optical Physics, 1996, 29, L29-L31.	0.6	46

#	ARTICLE	IF	CITATIONS
19	Bound $1/4+1/4\hat{a}^{\sim}$ system. Physical Review A, 1997, 56, 4483-4495.	1.0	45
20	Hyperfine structure in hydrogen and helium ion. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2002, 524, 259-264.	1.5	44
21	Extraction of the electron mass from $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle g \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -factor measurements on light hydrogenlike ions. Physical Review A, 2017, 96, .	1.0	44
22	Nuclear-spin-dependent recoil correction to the Lamb shift. Journal of Physics B: Atomic, Molecular and Optical Physics, 1995, 28, L221-L224.	0.6	43
23	New contributions to muonium and hydrogen hyperfine splitting induced by vacuum polarization insertions in external photons. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1989, 229, 285-288.	1.5	39
24	Delbrück scattering and the \hat{g} -factor of a bound electron. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2002, 549, 321-324.	1.5	39
25	Measurement of the $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:mi} \rangle S \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ Hyperfine Interval in Atomic Hydrogen. Physical Review Letters, 2009, 102, 213002.	2.9	39
26	Nonrelativistic contributions of order $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mi} \rangle \hat{1} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 5 \langle \text{mml:mn} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mn} \rangle$ the Lamb shift in muonic hydrogen and deuterium, and in the muonic helium ion. Physical Review A, 2010, 81, .	1.0	37
27	Fundamental physical constants: looking from different angles. Canadian Journal of Physics, 2005, 83, 767-811.	0.4	36
28	Contribution of light-by-light scattering to energy levels of light muonic atoms. JETP Letters, 2010, 92, 8-14.	0.4	36
29	Constraints on a long-range spin-independent interaction from precision atomic physics. Physical Review D, 2010, 82, .	1.6	34
30	Muonium hyperfine structure and hadronic effects. Physical Review D, 2002, 65, .	1.6	33
31	Relativistic recoil corrections to the electron-vacuum-polarization contribution in light muonic atoms. Physical Review A, 2012, 85, .	1.0	33
32	Theory of Lamb Shift in Muonic Hydrogen. Journal of Physical and Chemical Reference Data, 2015, 44, .	1.9	32
33	First corrections of order $\hat{1} \pm 2 (Z \hat{1} \pm) 5$ to hyperfine splitting and Lamb shift induced by two-loop insertions in the electron line. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1993, 312, 358-366.	1.5	31
34	Leading logarithmic corrections and uncertainty of Muonium hyperfine splitting calculations. Zeitschrift für Physik D-Atoms Molecules and Clusters, 1996, 36, 11-15.	1.0	31
35	Production of bound $1/4+1/4\hat{a}^{\sim}$ systems in relativistic heavy ion collisions. Physical Review C, 1998, 58, 3565-3573.	1.1	30
36	Logarithmic terms in muonium hyperfine splitting. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1989, 216, 405-408.	1.5	29

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55	Constraint on axionlike particles from atomic physics. <i>Physical Review A</i> , 2011, 84, .	1.0	21
56	The Lamb shift of the 1s state in hydrogen: Two-loop and three-loop contributions. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2019, 795, 432-437.	1.5	21
57	Nonresonant effects and hydrogen transition line shape in cosmological recombination problems. <i>Astronomy Letters</i> , 2008, 34, 289-297.	0.1	20
58	Polarization of vacuum in a hydrogen-like relativistic atom: Hyperfine structure. <i>Journal of Experimental and Theoretical Physics</i> , 2000, 90, 59-65.	0.2	19
59	Hadronic light-by-light scattering in muonium hyperfine splitting. <i>Physical Review D</i> , 2008, 78, .	1.6	19
60	Recoil correction to the proton finite-size contribution to the Lamb shift in muonic hydrogen. <i>Physical Review D</i> , 2015, 91, .	1.6	19
61	The g factor of the proton. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2003, 566, 27-34.	1.5	18
62	Recent progress in determination of fundamental constants and fundamental physics at low energies. <i>Annalen Der Physik</i> , 2013, 525, 472-483.	0.9	18
63	Progress in the accuracy of the fundamental physical constants: 2010 CODATA recommended values. <i>Physics-Uspekhi</i> , 2013, 56, 883-909.	0.8	18
64	Accuracy of the optical determination of the proton charge radius. <i>Physical Review A</i> , 2015, 91, .	1.0	18
65	Fried-Yennie gauge recalculation of the electron line induced radiative-recoil corrections to muonium hyperfine splitting. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1989, 216, 401-404.	1.5	17
66	Muonic vacuum polarization contribution to the energy levels of atomic hydrogen. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1995, 28, L77-L79.	0.6	17
67	Polarization of the vacuum in a relativistic hydrogenlike atom: The Lamb shift. <i>Journal of Experimental and Theoretical Physics</i> , 1999, 89, 850-855.	0.2	17
68	Fundamental physical constants: their role in physics and metrology and recommended values. <i>Physics-Uspekhi</i> , 2005, 48, 255-280.	0.8	17
69	Analytic calculation of radiative-recoil corrections to muonium hyperfine splitting: Muon-line contribution. <i>Annals of Physics</i> , 1991, 205, 291-308.	1.0	16
70	Radiative corrections to dipole matrix elements in hydrogen-like atoms. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1996, 210, 313-316.	0.9	16
71	Hadronic vacuum polarization contribution to the muonium hyperfine splitting. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2001, 517, 32-36.	1.5	16
72	Some analytic results on the Uehling correction in a muonic atom. <i>Canadian Journal of Physics</i> , 1998, 76, 169-172.	0.4	16

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91	Virtual Delbrück scattering and the Lamb shift in light hydrogenlike atoms. Physical Review A, 2019, 100, .	1.0	11
92	Nonresonant corrections for the optical resonance frequency measurements in the hydrogen atom. Physical Review A, 2009, 79, .	1.0	10
93	Lamb shift of electronic states in neutral muonic helium, an electron-muon-nucleus system. Physical Review A, 2015, 91, .	1.0	10
94	Study of hyperfine structure in simple atoms and precision tests of the bound state QED. Nuclear Physics, Section B, Proceedings Supplements, 2006, 162, 260-263.	0.5	9
95	Adjusted recommended values of the fundamental physical constants. European Physical Journal: Special Topics, 2009, 172, 385-397.	1.2	9
96	Quantum electrodynamics, high-resolution spectroscopy and fundamental constants. Applied Physics B: Lasers and Optics, 2017, 123, 1.	1.1	9
97	Low energy levels in neutral muonic helium within a nonrelativistic approach. Physical Review A, 2018, 97, .	1.0	9
98	Lamb shift and fine structure at $n=2$ in a hydrogenlike muonic atom with the nuclear spin $I=0$. Physical Review A, 2018, 97, .	1.0	9
99	Hadronic vacuum-polarization contribution to various QED observables. European Physical Journal D, 2021, 75, 1.	0.6	9
100	Bound states of the muon-antimuon system: Lifetimes and hyperfine splitting. Journal of Experimental and Theoretical Physics, 1998, 86, 226-236.	0.2	8
101	Wave function correction to the decay of pionium and heavy fermionium. Physics Letters, Section A: General, Atomic and Solid State Physics, 1998, 241, 351-356.	0.9	8
102	A constraint on antigravity of antimatter from precision spectroscopy of simple atoms. Astronomy Letters, 2009, 35, 663-669.	0.1	8
103	Advances in Determination of Fundamental Constants. Journal of Physical and Chemical Reference Data, 2015, 44, .	1.9	8
104	Three-loop radiative corrections to the $1s$ Lamb shift in hydrogen. Physical Review A, 2019, 100, .	1.0	8
105	Some analytic results on the Uehling correction to hyperfine splitting in a muonic atom. Canadian Journal of Physics, 1998, 76, 503-506.	0.4	8
106	Two-body effects in the decay rate of atomic levels. Physical Review A, 1997, 56, 4311-4313.	1.0	7
107	Simple Atoms, Quantum Electrodynamics, and Fundamental Constants. Lecture Notes in Physics, 2003, , 141-162.	0.3	7
108	Cosmological variation of the fine-structure constant versus a new interaction. Physical Review A, 2004, 70, .	1.0	7

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109	The Uehling correction to the energy levels in a pionic atom. Canadian Journal of Physics, 2006, 84, 107-113.	0.4	7
110	g factor of the bound electron and muon. Canadian Journal of Physics, 2007, 85, 541-549.	0.4	7
111	Hyperfine splitting in muonic hydrogen: QED corrections of the $\hat{1}\pm 2$ order, JETP Letters, 2009, 89, 216-216.	0.4	7
112	Positronium, antihydrogen, light, and the equivalence principle. Journal of Physics B: Atomic, Molecular and Optical Physics, 2016, 49, 144001.	0.6	7
113	$\hat{1}\pm(Z\hat{1}\pm)5m$ finite-nuclear-size contribution to the energy levels in light muonic atoms. Physical Review A, 2018, 98, .	1.0	7
114	Light-by-light-scattering contributions to the Lamb shift in light muonic atoms. Physical Review A, 2018, 98, .	1.0	7
115	Higher-order logarithmic corrections and the two-loop self-energy of a $1s$ electron in hydrogen. Physical Review A, 2019, 100, .	1.0	7
116	Title is missing!. Physics-Uspexhi, 2006, 49, 947.	0.8	6
117	New recommended values of the fundamental physical constants (CODATA 2006). Physics-Uspexhi, 2008, 51, 1019-1026.	0.8	6
118	Comments to "On the Accuracy of Lamb Shift Measurements in Hydrogen". Physica Scripta, 1998, 57, 213-214.	1.2	5
119	An Introduction to Varying Fundamental Constants. Lecture Notes in Physics, 2004, , 1-18.	0.3	5
120	Corrections to the energy levels of a spin-zero particle bound in a strong field. Physical Review A, 2006, 73, .	1.0	5
121	Theory of the Lamb shift in muonic tritium and the muonic ^3He ion. Physical Review A, 2017, 96, .	1.0	5
122	Precise physics of simple atoms. AIP Conference Proceedings, 2001, , .	0.3	4
123	Relativistic recoil effects for energy levels in a muonic atom within a Grotch-type approach. I. General approach. Physical Review A, 2014, 89, .	1.0	4
124	Relativistic recoil effects for energy levels in a muonic atom within a Grotch-type approach. II. An application to the one-loop electronic vacuum polarization. Physical Review A, 2014, 89, .	1.0	4
125	The g Factor of a Bound Electron in a Hydrogen-Like Atom. , 2001, , 651-663.		4
126	Corrections to hyperfine splitting and Lamb shift induced by diagrams with second-order radiative insertions in the electron line. IEEE Transactions on Instrumentation and Measurement, 1995, 44, 481-483.	2.4	3

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127	Radiative corrections to the light muonic atoms decay rate. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 235, 375-378.	0.9	3
128	New limit on the present temporal variation of the fine structure constant. AIP Conference Proceedings, 2005, , .	0.3	3
129	The 2s hyperfine structure in hydrogen and deuterium: a precision test of bound state quantum electrodynamics. Canadian Journal of Physics, 2005, 83, 283-292.	0.4	3
130	2s Hyperfine splitting in light hydrogen-like atoms: Theory and experiment. Journal of Experimental and Theoretical Physics, 2006, 102, 367-379.	0.2	3
131	Vacuum polarization in muonic and exotic atoms: the Lamb shift at medium $\langle i \rangle Z \langle /i \rangle$ and high $\langle i \rangle n \langle /i \rangle$. Canadian Journal of Physics, 2007, 85, 551-561.	0.4	3
132	Towards a natural system of units for physics and metrology. European Physical Journal: Special Topics, 2008, 163, 141-157.	1.2	3
133	Fundamental physical constants: Input data and recommended values by CODATA 2002. Physics of Particles and Nuclei Letters, 2008, 5, 310-316.	0.1	3
134	Root-mean-square charge radius of a muonic atom. Physical Review A, 2016, 94, .	1.0	3
135	Radiative corrections to the hadronic vacuum polarization contribution to the muonium hyperfine interval. Physical Review D, 2018, 97, .	1.6	3
136	Determination of the Proton Charge Radius by Different Methods. Physics of Particles and Nuclei Letters, 2019, 16, 514-519.	0.1	3
137	Theoretical prediction for the muonium hyperfine-structure interval and its accuracy. Physical Review A, 2021, 103, .	1.0	3
138	Radiative corrections for level widths in light muonic atoms. Journal of Experimental and Theoretical Physics, 1997, 85, 435-440.	0.2	2
139	Uehling correction in muonic atoms to all orders of $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle Z \langle / \text{mml:mi} \rangle \langle \text{mml:mi} \rangle \hat{I} \pm \langle / \text{mml:mi} \rangle \langle / \text{mml:mrow} \rangle \langle / \text{mml:math} \rangle$. Physical Review A, 2009, 80, .	1.0	2
140	Relativistic recoil effects on energy levels in a muonic atom: A Grotch-type calculation of the second-order vacuum-polarization contributions. Physical Review A, 2014, 89, .	1.0	2
141	Salpeter contribution to the Lamb shift in a hydrogenlike atom with the nuclear spin $I=1$. Physical Review D, 2018, 97, .	1.6	2
142	Relativistic finite-nuclear-size corrections to the energy levels in light muonic atoms. Physical Review A, 2019, 99, .	1.0	2
143	2s Hyperfine Structure in Hydrogen Atom and Helium-3 Ion. Lecture Notes in Physics, 2001, , 335-343.	0.3	2
144	Sum rules for an atomic hyperfine structure in a magnetic field. Canadian Journal of Physics, 2006, 84, 801-811.	0.4	1

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145	Quantum Approach to Electromagnetic Units: The SI and the Gaussian System. IEEE Transactions on Instrumentation and Measurement, 2007, 56, 444-447.	2.4	1
146	Recoil correction to the decay rate of $\langle mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline">\langle mml:mrow>\langle mml:mn>2\langle mml:mn>\langle mml:mi>p\langle mml:mi>\langle mml:mrow>\langle mml:math>states$ in hydrogenlike atoms. Physical Review A, 2009, 79, .	1.0	1
147	Neutral meson oscillations and equivalence principle for particles and antiparticles. Physics of Particles and Nuclei Letters, 2009, 6, 450-454.	0.1	1
148	Decay of the dimuonium into a photon and a neutral pion. Physical Review D, 2017, 96, .	1.6	1
149	The g factor of the bound muon in medium-Z muonic atoms. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2018, 786, 485-490.	1.5	1
150	Subtractions and the effective Salpeter term for the Lamb shift in muonic atoms with the nuclear spin $I \hat{=} 2$. European Physical Journal D, 2019, 73, 1.	0.6	1
151	Hyperfine Structure in Muonic Hydrogen. , 2001, , 446-453.		1
152	Lamb Shift in Light Hydrogen-Like Atoms. , 2001, , 637-650.		1
153	Precision Optical Measurements and Fundamental Physical Constants. , 2002, , 165-176.		1
154	The fine structure constant and the muonium atom. Measurement Techniques, 1993, 36, 134-141.	0.2	0
155	What do we actually know on the proton radius?. , 0, , .		0
156	Towards an optical measurement of the HFS interval in the 2s state in hydrogen. , 0, , .		0
157	Simple atoms, and fundamental constants. , 0, , .		0
158	Determination of Magnetic Moments of Proton and Deuteron. , 2004, , .		0
159	Preface / PrÃ©face. Canadian Journal of Physics, 2007, 85, v-vi.	0.4	0
160	Chapter 12 Conceptual Problems in Phenomenological Interpretation in Searches for Variation of Constants and Violation of Various Invariances. Advances in Quantum Chemistry, 2008, , 237-252.	0.4	0
161	Foreword / Avant-Propos. Canadian Journal of Physics, 2009, 87, iii.	0.4	0
162	Accurate Determination of the Values of Fundamental Physical Constants: The Basis of the New $\hat{=}SI$ Units. Physics of Particles and Nuclei, 2018, 49, 213-248.	0.2	0

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163	Quantum Electrodynamics, High-Resolution Spectroscopy and Fundamental Constants. , 2018, , 237-265.		0
164	Two-body corrections to the g factors of the bound muon and nucleus in light muonic atoms. European Physical Journal D, 2019, 73, 1.	0.6	0
165	Looking Through Simple Atoms and Molecules at Fundamental Physics. Lecture Notes in Physics, 2008, , 1-5.	0.3	0
166	Guide for Atomic and Particle Physicists to CODATA's Recommended Values of the Fundamental Physical Constants. Lecture Notes in Physics, 2008, , 35-53.	0.3	0