

# Krzysztof Pachucki

## List of Publications by Year in descending order

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182  
papers

8,057  
citations

38660

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64668

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187  
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187  
docs citations

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times ranked

2245  
citing authors

#	ARTICLE	IF	CITATIONS
1	Nonrelativistic energy of tritium-containing hydrogen molecule isotopologues. <i>Molecular Physics</i> , 2022, 120, .	0.8	3
2	QED theory of the nuclear magnetic shielding in H and $^3\text{He}$ . <i>Physical Review A</i> , 2022, 105, .	1.3	2
3	Nuclear magnetic shielding in HD and HT. <i>Physical Review A</i> , 2022, 105, .	1.0	3
4	Born-Oppenheimer potentials for $1s$ , $1s^2$ , and $1s^3$ states of the hydrogen molecule. <i>Molecular Physics</i> , 2022, 120, .	0.8	4
5	Radiative QED contribution to the helium Lamb shift. <i>Physical Review A</i> , 2021, 103, .	1.0	10
6	Accurate Born-Oppenheimer potentials for excited $1s^2$ states of the hydrogen molecule. <i>Advances in Quantum Chemistry</i> , 2021, , 255-267.	0.4	9
7	$^3\text{Be}$ state in $^3\text{He}$ and the nuclear quadrupole moment. <i>Physical Review A</i> , 2021, 104, .	1.3	7
8	Complete Lamb shift of helium triplet states. <i>Physical Review A</i> , 2021, 103, .	1.3	18
9	Atomic Structure Calculations of Helium with Correlated Exponential Functions. <i>Symmetry</i> , 2021, 13, 1246.	1.1	14
10	Fine and hyperfine splitting of the low-lying states of $^3\text{Be}$ . <i>Physical Review A</i> , 2021, 104, .	1.3	5
11	Hyperfine structure of the $^3\text{He}$ atom. <i>Physical Review Letters</i> , 2021, 127, 263001.	2.9	12
12	QED calculation of ionization energies of $1s^2$ states in helium. <i>Physical Review A</i> , 2020, 102, .	1.0	7
13	QED calculation of the fine structure in Li-like ions. <i>Physical Review A</i> , 2020, 102, .	1.0	11
14	Hyperfine structure in the HD molecule. <i>Physical Review A</i> , 2020, 102, .	1.0	15
15	Long-range asymptotics of exchange energy in the hydrogen molecule. <i>Journal of Chemical Physics</i> , 2020, 152, 174308.	1.2	6
16	Nonradiative QED effects in the Lamb shift of helium triplet states. <i>Physical Review A</i> , 2020, 101, .	1.0	11
17	Complete quantum electrodynamic $1\alpha^6 m$ correction to energy levels of light atoms. <i>Physical Review A</i> , 2019, 100, .	1.0	12

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19	Dissociation energy of molecular hydrogen isotopologues. <i>Physical Review A</i> , 2019, 100, .	1.0	25
20	Rovibrational energy levels of the hydrogen molecule through nonadiabatic perturbation theory. <i>Physical Review A</i> , 2019, 100, .	1.0	51
21	Theory of the Lamb Shift in Hydrogen and Light Hydrogen-Like Ions. <i>Annalen Der Physik</i> , 2019, 531, 1800324.	0.9	52
22	Quantum-electrodynamic corrections to the 1s3d states of the helium atom. <i>Physical Review A</i> , 2019, 99, .	1.0	11
23	Nuclear Charge Radii of $B$ . <i>Physical Review Letters</i> , 2019, 122, 182501.	2.9	24
24	Nonrelativistic energy levels of $D_2$ . <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 10272-10276.	1.3	9
25	Refractive index and generalized polarizability. <i>Physical Review A</i> , 2019, 99, .	1.0	5
26	Nonadiabatic QED Correction to the Dissociation Energy of the Hydrogen Molecule. <i>Physical Review Letters</i> , 2019, 122, 103003.	2.9	59
27	Equation of motion for a bound system of charged particles. <i>Physical Review A</i> , 2019, 100, .	1.0	3
28	Nuclear Spin-Spin Coupling in HD, HT, and DT. <i>Physical Review Letters</i> , 2018, 120, 083001.	2.9	11
29	Toward a Determination of the Proton-Electron Mass Ratio from the Lamb-Dip Measurement of HD. <i>Physical Review Letters</i> , 2018, 120, 153001.	2.9	67
30	The CODATA 2017 values of $h$ , $e$ , $k$ , and $N_A$ for the revision of the SI. <i>Metrologia</i> , 2018, 55, L13-L16.	0.6	228
31	Nonadiabatic rotational states of the hydrogen molecule. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 247-255.	1.3	31
32	Nonrelativistic energy levels of HD. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 26297-26302.	1.3	13
33	Nonadiabatic relativistic correction in $H_2$ , $D_2$ , and HD. <i>Physical Review A</i> , 2018, 98, .	1.0	43
34	Nuclear-structure corrections to the hyperfine splitting in muonic deuterium. <i>Physical Review A</i> , 2018, 98, .	1.0	18
35	Relativistic corrections to the Bethe logarithm for the $S_2$ and $S_3$ states of $H_2$ and $D_2$ .	1.0	24
36	Three-photon-exchange nuclear structure correction in hydrogenic systems. <i>Physical Review A</i> , 2018, 97, .	1.0	35

#	ARTICLE	IF	CITATIONS
37	Accurate deuterium spectroscopy for fundamental studies. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 213, 41-51 Nonadiabatic Relativistic Correction to the Dissociation Energy of $H^+$	1.1	54
38	Nonadiabatic Relativistic Correction to the Dissociation Energy of $H^+$	1.1	54
39	Higher-order recoil corrections for singlet states of the helium atom. Physical Review A, 2017, 95, .	1.0	27
40	One-loop binding corrections to the electron $g$ factor. Physical Review A, 2017, 96, .	1.0	11
41	Testing fundamental interactions on the helium atom. Physical Review A, 2017, 95, .	1.0	75
42	Relativistic corrections for the ground electronic state of molecular hydrogen. Physical Review A, 2017, 95, .	1.0	50
43	Measurement of the Frequency of the $2S \rightarrow 2P$ Transition in $H^+$	2.9	52
44	Analytic Formulas for Two-Center Two-Electron Integrals with Exponential Functions. Advances in Quantum Chemistry, 2016, 73, 103-118.	0.4	2
45	Complete $2S \rightarrow 2P$ Transition in $H^+$ to the Ground State of $H^+$	2.9	57
46	Schrödinger equation solved for the hydrogen molecule with unprecedented accuracy. Journal of Chemical Physics, 2016, 144, 164306.	1.2	36
47	Higher-order recoil corrections for triplet states of the helium atom. Physical Review A, 2016, 94, .	1.0	33
48	H2SOLV: Fortran solver for diatomic molecules in explicitly correlated exponential basis. Computer Physics Communications, 2016, 208, 162-168.	3.0	5
49	Nuclear mass corrections to the Casimir-Polder interaction. Physical Review A, 2016, 93, .	1.0	0
50	Quantum electrodynamics $m^{\pm}$ corrections to the fine structure doublet using short-lived isotopes. Physical Review A, 2015, 92, .	1.0	21
51	Deuteron and triton magnetic moments from NMR spectra of the hydrogen molecule. Physical Review A, 2015, 92, .	1.0	16
52	Explicitly correlated wave function for a boron atom. Physical Review A, 2015, 92, .	1.0	27
53	Precision Test of Many-Body QED in the $Be$ Fine Structure Doublet Using Short-Lived Isotopes. Physical Review Letters, 2015, 115, 033002.	2.9	17
54	Theory of the Helium Isotope Shift. Journal of Physical and Chemical Reference Data, 2015, 44, .	1.9	31

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55	Leading order nonadiabatic corrections to rovibrational levels of H <sub>2</sub> , D <sub>2</sub> , and T <sub>2</sub> . Journal of Chemical Physics, 2015, 143, 034111.	1.2	44
56	Nuclear structure effects in light muonic atoms. Physical Review A, 2015, 91, .	1.0	36
57	Functional form of the imaginary part of the atomic polarizability. European Physical Journal D, 2015, 69, 1.	0.6	10
58	Accurate adiabatic correction in the hydrogen molecule. Journal of Chemical Physics, 2014, 141, 224103.	1.2	42
59	Isotope shift in a beryllium atom. Physical Review A, 2014, 89, .	1.0	27
60	Electromagnetic moments of the bound system of charged particles. Physical Review A, 2014, 90, .	1.0	8
61	Quantum Electrodynamics Corrections to the 2P Fine Splitting in Li. Physical Review Letters, 2014, 113, 073004.	2.9	24
62	Ground-state hyperfine splitting in the Be ion. Physical Review A, 2014, 89, .	1.0	11
63	Extended Gaussian quadratures for functions with an end-point singularity of logarithmic type. Computer Physics Communications, 2014, 185, 2913-2919.	3.0	12
64	Muonic Hydrogen and the Proton Radius Puzzle. Annual Review of Nuclear and Particle Science, 2013, 63, 175-204.	3.5	283
65	Efficient approach to two-center exponential integrals with applications to excited states of molecular hydrogen. Physical Review A, 2013, 88, .	1.0	11
66	Ground State Hyperfine Splitting in $^6\text{Li}$ and the Nuclear Structure. Physical Review Letters, 2013, 111, 243001.	2.9	27
67	Testing quantum electrodynamics in the lowest singlet states of the beryllium atom. Physical Review A, 2013, 87, .	1.0	45
68	Fundamental Vibration of Molecular Hydrogen. Physical Review Letters, 2013, 110, 193601.	2.9	135
69	Application of the fully correlated basis of exponential functions for molecular hydrogen. Physical Review A, 2013, 87, .	1.0	6
70	The absorption spectrum of D <sub>2</sub> : Ultrasensitive cavity ring down spectroscopy of the (2s <sup>2</sup> σ <sup>+</sup> ) band near 1.7 μm and accurate <i>ab initio</i> line list up to 24 000 cm <sup>-1</sup> . Journal of Chemical Physics, 2012, 136, 184309.	1.2	46
71	Frequency Metrology of Helium around 1083 Ånm and Determination of the Nuclear Charge Radius. Physical Review Letters, 2012, 108, 143001.	2.9	80
72	Binding energies of the lithium isoelectronic sequence approaching the critical charge. Physical Review A, 2012, 86, .	1.0	13

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73	The absorption spectrum of H <sub>2</sub> : CRDS measurements of the (2-0) band, review of the literature data and accurate ab initio line list up to 35 000 cm <sup>-1</sup> . Physical Chemistry Chemical Physics, 2012, 14, 802-815.	1.3	88
74	Correlated exponential functions in high-precision calculations for diatomic molecules. Physical Review A, 2012, 86, .	1.0	14
75	Rovibrational levels of helium hydride ion. Journal of Chemical Physics, 2012, 137, 204314.	1.2	18
76	Born-Oppenheimer potential for HeH $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mrow} / \rangle \langle \text{mml:mo} \rangle + \langle \text{mml:mo} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:math} \rangle$ . Physical Review A, 2012, 85, .	1.0	26
77	Fine structure of helium and light helium-like ions This paper was presented at the International Conference on Precision Physics of Simple Atomic Systems, held at $\text{\AA}^{\circ}$ cole de Physique, les Houches, France, 30 May $\hat{e}$ 4 June, 2010.. Canadian Journal of Physics, 2011, 89, 95-101.	0.4	10
78	Quantum Electrodynamics Effects in Rovibrational Spectra of Molecular Hydrogen. Journal of Chemical Theory and Computation, 2011, 7, 3105-3115.	2.3	169
79	Gerade-ungerade mixing in the hydrogen molecule. Physical Review A, 2011, 83, .	1.0	16
80	Magnetic dipole transitions in the hydrogen molecule. Physical Review A, 2011, 83, .	1.0	20
81	Nuclear Structure Corrections in Muonic Deuterium. Physical Review Letters, 2011, 106, 193007.	2.9	51
82	Helium fine structure theory for determination of $\hat{1}\pm$ . Journal of Physics: Conference Series, 2011, 264, 012007.	0.3	18
83	Accurate determination of Be magnetic moment. Optics Communications, 2010, 283, 641-643.	1.0	7
84	Nuclear structure effects in the isotope shift with halo nuclei. Hyperfine Interactions, 2010, 196, 35-42.	0.2	15
85	Electrodynamics of finite-size particles with arbitrary spin. Physical Review A, 2010, 82, .	1.0	15
86	Applications of four-body exponentially correlated functions. Physical Review A, 2010, 81, .	1.0	14
87	Finite nuclear mass corrections to electric and magnetic interactions in diatomic molecules. Physical Review A, 2010, 81, .	1.0	12
88	Fine Structure of Heliumlike Ions and Determination of the Fine Structure Constant. Physical Review Letters, 2010, 104, 070403.	2.9	89
89	Rovibrational levels of HD. Physical Chemistry Chemical Physics, 2010, 12, 9188.	1.3	88
90	Theoretical energies of low-lying states of light helium-like ions. Physical Review A, 2010, 81, .	1.0	107



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109	Electrodynamics of a compound system with relativistic corrections. <i>Physical Review A</i> , 2007, 76, .	1.0	19
110	Ground-state wave function and energy of the lithium atom. <i>Physical Review A</i> , 2006, 73, .	1.0	97
111	Anomalous magnetic moments of free and bound leptons. <i>Canadian Journal of Physics</i> , 2006, 84, 453-462.	0.4	5
112	Mass measurements and the bound-electron g factor. <i>International Journal of Mass Spectrometry</i> , 2006, 251, 102-108.	0.7	32
113	Radiative correction to the helium dimer interaction energy. <i>Journal of Chemical Physics</i> , 2006, 124, 064308.	1.2	18
114	Electron affinity of Li7. <i>Journal of Chemical Physics</i> , 2006, 125, 204304.	1.2	36
115	Excitation energy of Be9. <i>Physical Review A</i> , 2006, 73, .	1.0	40
116	Improved Theory of Helium Fine Structure. <i>Physical Review Letters</i> , 2006, 97, 013002.	2.9	58
117	Helium energy levels including $m\hat{\pm}6$ corrections. <i>Physical Review A</i> , 2006, 74, .	1.0	46
118	$\hat{\pm}4R$ corrections to singlet states of helium. <i>Physical Review A</i> , 2006, 74, .	1.0	97
119	Isotope Shift of the $3s\hat{\sim}2s$ Transition in Lithium and the Nuclear Polarizability. <i>Physical Review Letters</i> , 2006, 97, 133001.	2.9	79
120	On the acceleration of the convergence of singular operators in Gaussian basis sets. <i>Journal of Chemical Physics</i> , 2005, 122, 184101.	1.2	51
121	Relativistic corrections to the long-range interaction between closed-shell atoms. <i>Physical Review A</i> , 2005, 72, .	1.0	18
122	Higher-order effective Hamiltonian for light atomic systems. <i>Physical Review A</i> , 2005, 71, .	1.0	79
123	Calculation of the One- and Two-Loop Lamb Shift for Arbitrary Excited Hydrogenic States. <i>Physical Review Letters</i> , 2005, 95, 180404.	2.9	45
124	One-loop self-energy correction in a strong binding field. <i>Physical Review A</i> , 2005, 72, .	1.0	21
125	QED Corrections to the Parity-Nonconserving $6s\hat{\sim}7s$ Amplitude in Cs133. <i>Physical Review Letters</i> , 2005, 94, 213002.	2.9	66
126	Nonrelativistic QED approach to the Lamb shift. <i>Physical Review A</i> , 2005, 72, .	1.0	90



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127	Extended Hylleraas three-electron integral. <i>Physical Review A</i> , 2005, 71, .	1.0	20
128	Complete two-loop correction to the bound-electron g-factor. <i>Physical Review A</i> , 2005, 72, .	1.0	133
129	Relativistic Correction to the Helium Dimer Interaction Energy. <i>Physical Review Letters</i> , 2005, 95, 233004.	2.9	32
130	Publisher's Note: Calculation of the One- and Two-Loop Lamb Shift for Arbitrary Excited Hydrogenic States [ <i>Phys. Rev. Lett.</i> 95, 180404 (2005)]. <i>Physical Review Letters</i> , 2005, 95, .	2.9	3
131	Lifetime and hyperfine structure of the $3D_{2}$ state of radium. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2004, 37, L305-L311.	0.6	32
132	Relativistic and QED Corrections for the Beryllium Atom. <i>Physical Review Letters</i> , 2004, 92, 213001.	2.9	95
133	Nonrelativistic QED Approach to the Bound-Electron g-Factor. <i>Physical Review Letters</i> , 2004, 93, 150401.	2.9	67
134	Recursion relations for the generic Hylleraas three-electron integral. <i>Physical Review A</i> , 2004, 70, .	1.0	39
135	Long-wavelength quantum electrodynamics. <i>Physical Review A</i> , 2004, 69, .	1.0	44
136	Three-electron integral in a Gaussian basis set with linear terms. <i>Physical Review A</i> , 2004, 70, .	1.0	12
137	Gaussian basis sets with the cusp condition. <i>Chemical Physics Letters</i> , 2004, 389, 209-211.	1.2	26
138	Nuclear recoil effects in antiprotonic and muonic atoms. <i>Physical Review A</i> , 2004, 69, .	1.0	38
139	Two-Loop Bethe-Logarithm Correction in Hydrogenlike Atoms. <i>Physical Review Letters</i> , 2003, 91, 113005.	2.9	79
140	Bethe logarithm for the lithium atom from exponentially correlated Gaussian functions. <i>Physical Review A</i> , 2003, 68, .	1.0	42
141	Theory of forbidden transitions in light atoms. <i>Physical Review A</i> , 2003, 67, .	1.0	16
142	Higher-order recoil corrections to helium fine structure. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2003, 36, 803-809.	0.6	40
143	Determination of the fine structure constant from helium spectroscopy. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2002, 35, 1783-1793.	0.6	30
144	Two-loop self-energy corrections to the fine structure. <i>Journal of Physics A</i> , 2002, 35, 1927-1942.	1.6	31

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145	The complete $m\alpha^6$ contribution to the helium $2\text{S}$ energy. Journal of Physics B: Atomic, Molecular and Optical Physics, 2002, 35, 3087-3093.	0.6	21
146	A problematic set of two-loop self-energy corrections. New Journal of Physics, 2002, 4, 49-49.	1.2	13
147	Lithium hyperfine splitting. Physical Review A, 2002, 66, .	1.0	20
148	Two-loop QED bound-state calculations and squared decay rates. Canadian Journal of Physics, 2002, 80, 1213-1223.	0.4	7
149	Quantum Electrodynamics and All That. , 2002, , 177-180.		0
150	Logarithmic two-loop corrections to the Lamb shift in hydrogen. Physical Review A, 2001, 63, .	1.0	71
151	Forbidden transitions in the helium atom. Physical Review A, 2001, 64, .	1.0	47
152	Hyperfine structure of muonic helium. Physical Review A, 2001, 63, .	1.0	17
153	Hyperfine splitting of $23\text{S}$ state in $\text{He}^3$ . Journal of Physics B: Atomic, Molecular and Optical Physics, 2001, 34, 3357-3365.	0.6	14
154	Contributions to helium fine structure of order $m^{\pm 7}$ . Journal of Physics B: Atomic, Molecular and Optical Physics, 2000, 33, 5297-5305.	0.6	41
155	Recoil corrections to the Lamb shift in helium. Journal of Physics B: Atomic, Molecular and Optical Physics, 2000, 33, 455-461.	0.6	40
156	Improved Result for Helium $23\text{S}$ Ionization Energy. Physical Review Letters, 2000, 84, 4561-4564.	2.9	46
157	Relativistic and QED corrections to the polarizability of helium. Physical Review A, 2000, 63, .	1.0	74
158	Quantum electrodynamics effects on helium fine structure. Journal of Physics B: Atomic, Molecular and Optical Physics, 1999, 32, 137-152.	0.6	43
159	Higher-order recoil corrections to energy levels of two-body systems. Physical Review A, 1999, 60, 2792-2798.	1.0	52
160	Proton structure effects in muonic hydrogen. Physical Review A, 1999, 60, 3593-3598.	1.0	132
161	Quantum electrodynamics of weakly bound systems. , 1998, 114, 55-70.		13
162	Hydrogen-Deuterium $1\text{S}$ $\sim 2\text{S}$ Isotope Shift and the Structure of the Deuteron. Physical Review Letters, 1998, 80, 468-471.	2.9	186

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163	Complete Results for Positronium Energy Levels at Order $\hat{m}^{\pm 6}$ . Physical Review Letters, 1998, 80, 2101-2104.	2.9	48
164	Simple derivation of helium Lamb shift. Journal of Physics B: Atomic, Molecular and Optical Physics, 1998, 31, 5123-5133.	0.6	70
165	Quantum electrodynamics effects on singlet S-states of helium of order. Journal of Physics B: Atomic, Molecular and Optical Physics, 1998, 31, 3547-3556.	0.6	35
166	Effective Hamiltonian approach to the bound state: energy of helium $\alpha$ -states in the order. Journal of Physics B: Atomic, Molecular and Optical Physics, 1998, 31, 2489-2499.	0.6	20
167	Effective Hamiltonian approach to the bound state: Positronium hyperfine structure. Physical Review A, 1997, 56, 297-304.	1.0	86
168	Recoil Effects in Positronium Energy Levels to Order $\hat{m}^{\pm 6}$ . Physical Review Letters, 1997, 79, 4120-4123.	2.9	22
169	Theory of the Lamb shift in muonic hydrogen. Physical Review A, 1996, 53, 2092-2100.	1.0	187
170	$\hat{m}^{\pm 2}(\hat{Z}\hat{m}^{\pm 2})$ correction to hyperfine splitting in hydrogenic atoms. Physical Review A, 1996, 54, 1994-1998.	1.0	53
171	Higher-order binding corrections to the Lamb shift of 2P states. Physical Review A, 1996, 54, 1853-1861.	1.0	100
172	Theory of the energy levels and precise two-photon spectroscopy of atomic hydrogen and deuterium. Journal of Physics B: Atomic, Molecular and Optical Physics, 1996, 29, 177-195.	0.6	106
173	Precision measurement of the 1S ground-state Lamb shift in atomic hydrogen and deuterium by frequency comparison. Physical Review A, 1995, 52, 2664-2681.	1.0	80
174	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
175	Pure recoil corrections to hydrogen energy levels. Physical Review A, 1995, 51, 1854-1862.	1.0	98
176	Radiative recoil correction to the Lamb shift. Physical Review A, 1995, 52, 1079-1085.	1.0	53
177	Theory of the hydrogen-deuterium isotope shift. Physical Review A, 1994, 49, 2255-2259.	1.0	45
178	Complete two-loop binding correction to the Lamb shift. Physical Review Letters, 1994, 72, 3154-3157.	2.9	129
179	Higher-Order Binding Corrections to the Lamb Shift. Annals of Physics, 1993, 226, 1-87.	1.0	136
180	Radiative correction to the electron charge density in the hydrogen atom. Physical Review A, 1993, 48, 120-128.	1.0	25

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181	Nuclear-structure correction to the Lamb shift. Physical Review A, 1993, 48, R1-R4.	1.0	35
182	Contributions to the binding, two-loop correction to the Lamb shift. Physical Review A, 1993, 48, 2609-2614.	1.0	57