Jacek Karwowski

List of Publications by Year
in descending order

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142	2,102	201674	302126
papers	citations	27 h-index	39 g-index

146	146	146	556
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Symmetric group approach to configuration interaction methods. Computer Physics Reports, 1985, 2, 93-170.	2.2	137
2	On the influence of the Debye screening on the spectra of two-electron atoms. Chemical Physics Letters, 2002, 363, 323-327.	2.6	80
3	Symmetric group graphical approach to the direct configuration interaction method. International Journal of Quantum Chemistry, 1982, 22, 783-824.	2.0	71
4	Quantum defect orbital study of electronic transitions in Rydberg molecules: ammonium and fluoronium radicals. Chemical Physics, 1996, 202, 307-320.	1.9	67
5	Spectra of confined two-electron atoms. Journal of Physics B: Atomic, Molecular and Optical Physics, 2001, 34, 1987-2000.	1.5	57
6	Matrix elements of a spin-adapted reduced Hamiltonian. Physical Review A, 1986, 33, 2254-2261.	2.5	48
7	Hartree-Fock values of coupling constants, polarizabilities, susceptibilities, and radII for the neutral atoms, helium to nobelium. Atomic Data and Nuclear Data Tables, 1973, 12, 467-477.	2.4	47
8	Quantum defect orbitals and the Dirac second-order equation. Journal of Physics B: Atomic, Molecular and Optical Physics, 1991, 24, 1539-1542.	1.5	47
9	Application of the complex-coordinate rotation to the relativistic Hylleraas-CI method: a case study. Journal of Physics B: Atomic, Molecular and Optical Physics, 2006, 39, 2979-2987.	1.5	47
10	Quasirelativistic formulation of the quantum-defect-orbital method. Physical Review A, 1991, 43, 4832-4836.	2.5	44
11	Matrix elements of one- and two-electron operators. Theoretica Chimica Acta, 1973, 29, 151-166.	0.8	43
12	Relativistic Hylleraas configuration-interaction method projected into positive-energy space. Physical Review A, 2008, 77, .	2.5	40
13	Relativistic effects in hydrogenlike atoms embedded in Debye plasmas. Physical Review E, 2004, 69, 016404.	2.1	38
14	Statistical theory of spectra. International Journal of Quantum Chemistry, 1994, 51, 425-437.	2.0	36
15	Quantum defect orbital calculation of oscillator strengths for electronic transitions in triatomic hydrogen. Chemical Physics Letters, 1996, 255, 89-92.	2.6	36
16	Biconfluent Heun equation in quantum chemistry: Harmonium and related systems. Theoretical Chemistry Accounts, 2014, 133, 1.	1.4	35
17	The resonance levels of the Yukawa potential. Chemical Physics, 2007, 331, 346-350.	1.9	34
18	Symmetric-group approach to the study of the traces ofp-order reduced-density operators and of products of these operators. Physical Review A, 1990, 41, 2391-2397.	2.5	33

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19	Complex coordinate rotation and relativistic Hylleraas-CI: helium isoelectronic series. Journal of Physics B: Atomic, Molecular and Optical Physics, 2007, 40, 2249-2259.	1.5	33
20	Relativistic calculations on the alkali atoms by a modified Hartree-Fock method. Journal of Physics B: Atomic and Molecular Physics, 1981, 14, 1915-1927.	1.6	32
21	Quasirelativistic methods. International Journal of Quantum Chemistry, 1985, 28, 741-756.	2.0	32
22	A multireference direct CI program based on the symmetric group graphical approach. Theoretica Chimica Acta, 1987, 71, 187-199.	0.8	32
23	The first two moments of energy level distributions in N-electron spin-adapted model spaces. Journal of Physics A, 1987, 20, 6309-6320.	1.6	31
24	Quantum defect orbital study of the sodium isoelectronic sequence. Physica Scripta, 1991, 44, 567-573.	2.5	30
25	Time-dependent perturbation calculations for transition properties of two-electron atoms under Debye plasma. Journal of Quantitative Spectroscopy and Radiative Transfer, 2003, 78, 131-137.	2.3	30
26	Harmonium. Annalen Der Physik, 2004, 13, 181-193.	2.4	28
27	Spherically confined two-electron atoms immersed in Debye plasma. Journal of Quantitative Spectroscopy and Radiative Transfer, 2005, 92, 1-8.	2.3	27
28	Matrix elements of rqfor quasirelativistic and Dirac hydrogenic wavefunctions. Journal of Physics A, 1987, 20, 3347-3352.	1.6	24
29	Influence of confinement on the properties of quantum systems. Computational and Theoretical Chemistry, 2005, 727, 1-7.	1.5	24
30	The dirac second-order equation and an improved quasirelativistic theory of atoms. International Journal of Quantum Chemistry, 1986, 30, 809-819.	2.0	23
31	The electronic spectrum of benzene. Chemical Physics Letters, 1973, 18, 47-50.	2.6	22
32	Matrix elements of the third-order spin-adapted reduced Hamiltonian. Physical Review A, 1988, 38, 2721-2728.	2.5	22
33	The Configuration Interaction Approach to Electron Correlation. NATO ASI Series Series B: Physics, 1992, , 65-98.	0.2	22
34	Matrix elements of spin-dependent one- and two-electron operators. Chemical Physics Letters, 1973, 19, 279-283.	2.6	21
35	Coupling constants in the direct configuration interaction method. Theoretica Chimica Acta, 1979, 51, 175-188.	0.8	21
36	Relativistic quantum defect orbital calculations of singlet-singlet transitions in the zinc and cadmium isoelectronic sequences. International Journal of Quantum Chemistry, 1993, 48, 385-397.	2.0	20

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37	Statistical theory of vibronic spectra: The intensity distributions. Journal of Quantitative Spectroscopy and Radiative Transfer, 1998, 59, 39-51.	2.3	18
38	An effective quasirelativistic hamiltonian. Chemical Physics, 1981, 55, 361-369.	1.9	17
39	Average energy of anN-electron system in a finite-dimensional and spin-adapted model space. International Journal of Quantum Chemistry, 1997, 61, 63-65.	2.0	17
40	Eigenvalues of model Hamiltonian matrices from spectral density distribution moments: The Heisenberg spin Hamiltonian. International Journal of Quantum Chemistry, 1996, 60, 185-193.	2.0	16
41	Harmonic oscillators in relativistic quantum mechanics. Theoretical Chemistry Accounts, 2007, 118, 519-525.	1.4	16
42	Geminals in Diracâ€“Coulomb Hamiltonian eigenvalue problem. Journal of Mathematical Chemistry, 2012, 50, 510-533.	1.5	16
43	Assignment of the electronic transitions in benzene. Journal of Molecular Structure, 1973, 19, 143-166.	3.6	15
44	Core polarisation and relativistic effects in the alkali atoms. Journal of Physics B: Atomic and Molecular Physics, 1981, 14, 4729-4735.	1.6	15
45	Multiconfiguration Dirac-Fock study on the ground-state energies of two-electron atoms. Journal of Physics B: Atomic, Molecular and Optical Physics, 1988, 21, 2389-2397.	1.5	15
46	Matrix elements of spin-adapted reduced Hamiltonians. Physical Review A, 1991, 43, 3392-3400.	2.5	15
47	Matrix elements ofrqin relativistic quantum defect orbital theory. Journal of Physics A, 2000, 33, 823-830.	1.6	15
48	Relativistic correlation energies of heliumlike atoms. Physical Review A, 2004, 70, .	2.5	15
49	Statistical theory of vibronic spectra: Envelopes of the electronic bands. Physical Review A, 1995, 52, 1067-1071.	2.5	14
50	Reply to â€˜â€˜Spin-adapted reduced Hamiltonian in view of the spectral-distribution methodâ€™â€™. Physical Review A, 1988, 37, 2712-2713.	2.5	13
51	Inverse problems in quantum chemistry. International Journal of Quantum Chemistry, 2009, 109, 2456-2463.	2.0	13
52	Invariance properties of the moments of the hamiltonian matrix as a test of the correctness of configuration interaction programs. Computer Physics Communications, 1987, 47, 83-89.	7.5	12
53	Moments of energy level distributions in vibrational spectra. Journal of Physics A, 1993, 26, 5581-5593.	1.6	12
54	Symmetric-group approach to the studies of spin-1/2 lattices. Physical Review B, 1997, 55, 8287-8294.	3.2	12

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55	Hylleraas-CI Approach to Diraccoulomb Equation. Progress in Theoretical Chemistry and Physics, 2003, , 331-346.	0.2	12
56	Spectral distributions in a modelN-electron Hamiltonian. Physical Review A, 1989, 40, 5507-5515.	2.5	11
57	A numerical study on the validity of the Breit-Pauli approximation. Journal of Physics B: Atomic, Molecular and Optical Physics, 1991, 24, 4877-4886.	1.5	11
58	Quantum defect orbital study of electron transitions in rydberg molecules. I. Triatomic hydrogen. International Journal of Quantum Chemistry, 1993, 48, 723-729.	2.0	11
59	TWO INTERACTING PARTICLES IN A PARABOLIC WELL: HARMONIUM AND RELATED SYSTEMS*. Computational Methods in Science and Technology, 2003, 9, 67-78.	0.3	11
60	CI calculation on the Rydberg spectrum of H3. Chemical Physics Letters, 1990, 168, 69-74.	2.6	10
61	Method for locating errors in Hamiltonian matrices. Physical Review A, 1990, 41, 3503-3510.	2.5	10
62	Statistical analysis of the (3d+4s)54pspectrum of Cr i. Physical Review A, 1991, 44, 3054-3059.	2.5	10
63	Traces of powers of the Hamiltonian operator in finite-dimensional antisymmetric model spaces. Journal of Physics A, 1993, 26, 3883-3901.	1.6	10
64	A diagrammatic approach to statistical spectroscopy of many-fermion Hamiltonians. Physics Reports, 1996, 267, 161-194.	25.6	10
65	Dirac-Coulomb Hamiltonian in N-Electron Model Spaces. Collection of Czechoslovak Chemical Communications, 2003, 68, 275-294.	1.0	10
66	A Class of Exactly Solvable SchrÃ¶dinger Equations. Collection of Czechoslovak Chemical Communications, 2005, 70, 864-880.	1.0	10
67	Few-particle systems: quasi-exactly solvable models. Journal of Physics: Conference Series, 2008, 104, 012033.	0.4	10
68	Separable N-particle Hookean models. Journal of Physics: Conference Series, 2010, 213, 012016.	0.4	10
69	Discrete-spectrum contributions to the Bauche-Arnoult hyperfine structure parameters for the first row transition metal atoms. Journal De Physique, 1984, 45, 681-688.	1.8	10
70	Some results for symmetric-group-adapted reduced density operators. Theoretica Chimica Acta, 1992, 82, 239-248.	0.8	9
71	A separable model of N interacting Particles. International Journal of Quantum Chemistry, 2008, 108, 2253-2260.	2.0	9
72	Smooth models for the Coulomb potential. Theoretical Chemistry Accounts, 2016, 135, 1.	1.4	9

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73	Quasi-relativistic approach to low-energy electron scattering from closed-shell atoms. Journal of Physics B: Atomic and Molecular Physics, 1986, 19, 1093-1105.	1.6	8
74	A comment on several results of CI calculations for H2O. Chemical Physics Letters, 1988, 144, 421-422.	2.6	8
75	Symmetricâ€groupâ€based methods in quantum chemistry. Journal of Mathematical Chemistry, 1998, 23, 127-149.	1.5	8
76	Representation of the Dirac equation and the variational principle. International Journal of Quantum Chemistry, 2006, 106, 3129-3139.	2.0	8
77	Ground-state energies of closed-shell atoms. International Journal of Quantum Chemistry, 1985, 28, 27-37.	2.0	7
78	The First Four Moments of the Spectral Density Distribution of an N-Electron Hamiltonian Matrix Defined in an Antisymmetric and Spin-Adapted Model Space. Atomic Data and Nuclear Data Tables, 1995, 61, 177-232.	2.4	7
79	Spectral density distribution moments ofN-electron Hamiltonians in the low-density limit. Journal of Physics A, 1997, 30, 2181-2196.	1.6	7
80	Statistical properties of spectra of the Heisenberg Hamiltonian. Physical Review B, 1999, 59, 2676-2683.	3.2	7
81	Modification of nonrelativistic Gaussian basis sets for relativistic calculations. Journal of Chemical Physics, 2001, 115, 9160-9164.	3.0	7
82	The eigenvalue problem of one-dimensional Dirac operator. Theoretical Chemistry Accounts, 2020, 139, 1.	1.4	7
83	Relativistic treatments for bound-state atomic energies. Theoretica Chimica Acta, 1974, 35, 183-187.	0.8	6
84	Atomic Ionization Potentials Derived from Theoretical Calculations. Canadian Journal of Physics, 1975, 53, 2415-2420.	1.1	6
85	Second-order spin-adapted reduced Hamiltonian in the coordinate representation. Physical Review A, 1989, 39, 4967-4971.	2.5	6
86	Vertical Electron Transitions in Rydberg Radicals. Advances in Quantum Chemistry, 1998, 32, 181-196.	0.8	6
87	Dirac-Coulomb Equation: Playing with Artifacts. Progress in Theoretical Chemistry and Physics, 2008, , 215-238.	0.2	6
88	Hartreeâ€“Fock Ionization Potentials of Atoms. Canadian Journal of Physics, 1973, 51, 2063-2074.	1.1	5
89	Nuclear Mass Dependence of the Diracâ€“Breitâ€“Pauli Hamiltonian. Canadian Journal of Physics, 1974, 52, 536-540.	1.1	5
90	A numerical method for separation of overlapping components of a spectral line. Optics Communications, 1977, 23, 362-364.	2.1	5

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91	Traces of symmetry-adapted reduced density operators. Journal of Physics A, 1990, 23, 5083-5088.	1.6	5
92	Determining the Shapes of Molecular Electronic Bands from their Intensity Distribution Moments. Advances in Quantum Chemistry, 1997, 28, 159-169.	0.8	5
93	Quantum-Chemical Models. , 1997, , 37-84.		5
94	Symmetric group approach to relativistic CI. II. Reduction of matrices in the spin space. International Journal of Quantum Chemistry, 1997, 61, 11-20.	2.0	5
95	Characters of two-row representations of the symmetric group. International Journal of Quantum Chemistry, 1997, 62, 261-264.	2.0	5
96	Generalized one-electron spin functions and self-similarity measures. Journal of Mathematical Chemistry, 2001, 29, 41-45.	1.5	5
97	SchrÃ¶dinger equations with power potentials. Molecular Physics, 2016, 114, 932-940.	1.7	5
98	Core Polarization Effects in the Relativistic Quantum-Defect-Orbital Theory. Acta Physica Polonica A, 1994, 85, 805-812.	0.5	5
99	On moment-generated spectra of atoms. Physica B: Physics of Condensed Matter & C: Atomic, Molecular and Plasma Physics, Optics, 1987, 145, 241-248.	0.9	4
100	Relativistic effects on the computation of oscillator strengths for the principal series in Na-like systems. Computational and Theoretical Chemistry, 1992, 254, 161-170.	1.5	4
101	Adaptation of one-electron basis sets to spatial confinements. , 1999, 73, 341-347.		4
102	Kinetically balanced Dirac equation: properties and applications. Molecular Physics, 2006, 104, 2085-2092.	1.7	4
103	Quasi-Exactly Solvable Models in Quantum Chemistry. Collection of Czechoslovak Chemical Communications, 2008, 73, 1372-1390.	1.0	4
104	The second Exton potential for the SchrÃ¶dinger equation. Modern Physics Letters A, 2019, 34, 1950195.	1.2	4
105	Variational Principle in the Dirac Theory: Spurious Solutions, Unexpected Extrema and Other Traps. Progress in Theoretical Chemistry and Physics, 2001, , 175-190.	0.2	4
106	Quasirelativistic calculations of the elastic scattering of slow electrons from Xe atoms. Physica Scripta, 1987, 36, 436-440.	2.5	3
107	Comment on "A comparison of relativistic and quasirelativistic line strengths" by A. K. Mohanty and D. H. Sampson. Physica Scripta, 1988, 38, 554-556.	2.5	3
108	Spectral density distribution of anN-electron Hamiltonian in a finite-dimensional and spin-adapted model space. International Journal of Quantum Chemistry, 1995, 56, 71-79.	2.0	3

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109	Some properties of configuration interaction matrices and their applications. Computational and Theoretical Chemistry, 2001, 537, 9-15.	1.5	3
110	Symmetric group approach to spin-dependent CI. Computational and Theoretical Chemistry, 2001, 547, 245-252.	1.5	3
111	Relations between Pariser-Parr-Pople and Heisenberg models. International Journal of Quantum Chemistry, 2002, 90, 1091-1098.	2.0	3
112	Dirac Operator and Its Properties. , 2017, , 3-49.		3
113	A Comparison of Different Approximate Two-Component Relativistic Theories of Many-Electron Systems: A Case Study of the Ionization Energies of Two-Electron Ions. Acta Physica Polonica A, 2001, 99, 631-641.	0.5	3
114	Relativistic and correlation corrections to electron affinities of alkali and halogen atoms. Theoretica Chimica Acta, 1983, 63, 313-316.	0.8	2
115	Traces of the reduced density operators revisited: closed-form formulae. Journal of Physics A, 1997, 30, 3219-3227.	1.6	2
116	Theoretical and computational aspects of extended wave functions. International Journal of Quantum Chemistry, 2001, 84, 331-337.	2.0	2
117	HARMONIC OSCILLATORS REVISITED: RELATIVISTIC FORMULATIONS, CONFINED PARTICLES, AND SEVERAL OTHER ASPECTS. , 2003, , .		2
118	Unexpected properties of a density functional. Physical Review A, 2005, 71, .	2.5	2
119	Some Remarks on the Mass Density Distribution. Croatica Chemica Acta, 2013, 86, 531-539.	0.4	2
120	Analytical Solutions of the SchrÃ¶dinger Equation with Power Potentials. Journal of the Chinese Chemical Society, 2016, 63, 101-108.	1.4	2
121	Exact matrix elements for general two-body central-force interactions, expressed as sums of products. Molecular Physics, 2019, 117, 1264-1275.	1.7	2
122	Two-particle coalescence conditions revisited. Molecular Physics, 2022, 120, .	1.7	2
123	State Functions for Many Electron Atoms: Eigenfunctions of J² and S² for One Open Shell Configurations. Canadian Journal of Physics, 1974, 52, 1845-1846.	1.1	1
124	Fine Structure Intervals in Transition Elements. Canadian Journal of Physics, 1975, 53, 2421-2427.	1.1	1
125	Statistical properties of spin-adapted reduced Hamiltonians. International Journal of Quantum Chemistry, 1994, 51, 487-497.	2.0	1
126	Commutator perturbation method in the study of vibrational-rotational spectra of diatomic molecules. International Journal of Quantum Chemistry, 2000, 77, 721-726.	2.0	1

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127	Symmetric group approach to the theory of Heisenberg lattices. Theoretical and Computational Chemistry, 2002, 10, 603-634.	0.4	1
128	A Note on Nonlinear Parameters in Variational Methods. Structural Chemistry, 2004, 15, 427-429.	2.0	1
129	Energyâ€dependent scaling of the Dirac equation. International Journal of Quantum Chemistry, 2009, 109, 2903-2908.	2.0	1
130	Density functional theory and multicomponent wave functions. International Journal of Quantum Chemistry, 2013, 113, 667-672.	2.0	1
131	The SchrÃ¶dinger Equation with Power Potentials: Exactly-Solvable Problems. Progress in Theoretical Chemistry and Physics, 2021, , 43-57.	0.2	1
132	NON-STANDARD REPRESENTATIONS OF THE DIRAC EQUATION AND THE VARIATIONAL METHOD. , 2006, , 217-228.		1
133	Matrix Elements for Many-Electron Atoms: Electrostatic Interaction Energies for One-Open-Shell Configurations. Canadian Journal of Physics, 1974, 52, 238-240.	1.1	0
134	Some Forgotten Terms of the Diracâ€“Breitâ€“Pauli Equation. Canadian Journal of Physics, 1974, 52, 1045-1045.	1.1	0
135	State Functions for Many Electron Atoms: Eigenfunctions of L2 and S2 for One Open Shell Configurations. Canadian Journal of Physics, 1974, 52, 1672-1675.	1.1	0
136	Density of levels in vibrational spectra of molecules. International Journal of Quantum Chemistry, 1997, 63, 835-842.	2.0	0
137	Ian P. Grant, FRS â€" a biographical note. Computer Physics Communications, 2001, 138, 10-17.	7.5	0
138	Operator averages in finite-dimensional N-electron model spaces: a diagrammatic approach. Molecular Physics, 2004, 102, 1213-1219.	1.7	0
139	The Dirac Operator in Quantum Chemistry and Physics. Progress in Theoretical Chemistry and Physics, 2017, , 361-374.	0.2	0
140	LutosÅ‚aw Wolniewicz (1930â€“2020). Molecular Physics, 0, , .	1.7	0
141	Eigenvalues of model Hamiltonian matrices from spectral density distribution moments: The Heisenberg spin Hamiltonian. International Journal of Quantum Chemistry, 1996, 60, 185-193.	2.0	0
142	Symmetric group approach to relativistic CI. III. Matrix elements for spinâ€dependent operators. International Journal of Quantum Chemistry, 1997, 61, 21-34.	2.0	0