Stephen Wilson

List of Publications by Year in descending order

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78 papers	2,093 citations	201674 27 h-index	265206 42 g-index
79 all docs	79 docs citations	79 times ranked	458 citing authors

#	Article	IF	Citations
1	Parametrisation of the optimised effective potential method based on the Coulsonâ€“Fischer wave function for excited states. Molecular Physics, 2020, 118, e1696479.	1.7	1
2	The Coulsonâ€“Fischer wave functions for the ground and excited states of H2and HeH+: parametrisation using distributed Gaussian basis sets. Molecular Physics, 2014, 112, 3092-3107.	1.7	2
3	On the Coulsonâ€“Fischer wave function for theX¹Aâ€² H⁺₃molecular ion: parametrisation using distributed Gaussian basis sets. Molecular Physics, 2014, 112, 904-918.	1.7	1
4	Theoretical study of the HeN2+2dication. Molecular Physics, 2013, 111, 3801-3807.	1.7	0
5	On the Coulson-Fischer wave function and a local static correlation potential. Molecular Physics, 2012, 110, 149-161.	1.7	7
6	On the representation matrices for the symmetric group adapted to electronâ€pair and electronâ€group wave functions using graphical methods of spin algebras. International Journal of Quantum Chemistry, 2012, 112, 3098-3109.	2.0	0
7	Brillouin-Wigner Methods for Many-Body Systems. Progress in Theoretical Chemistry and Physics, 2010, , .	0.2	39
8	Brillouin-Wigner Methods for Many-Body Systems. Progress in Theoretical Chemistry and Physics, 2010, , 133-189.	0.2	7
9	Summary and Prospects. Progress in Theoretical Chemistry and Physics, 2010, , 191-199.	0.2	0
10	The Coulsonâ€“Fischer wave function: parametrisation using distributed Gaussian basis sets. Molecular Physics, 2009, 107, 2299-2308.	1.7	9
11	Theoretical study of the helio hydrogen cyanide dication HeCNH²⁺. Molecular Physics, 2009, 107, 2275-2282.	1.7	2
12	Distributed Gaussian basis sets: a comparison with finite difference Hartreeâ€“Fock calculations for potential energy curves of H₂, LiH and BH. Journal of Physics B: Atomic, Molecular and Optical Physics, 2008, 41, 205102.	1.5	9
13	Many-body Brillouinâ€“Wigner second-order perturbation theory: an application to the autoaromatisation of hex-3-ene-1,5-diyne (the Bergman reaction). Molecular Physics, 2008, 106, 57-74.	1.7	6
14	Basis Sets. Advances in Chemical Physics, 2007, , 439-500.	0.3	80
15	Distributed basis sets of s-type Gaussian functions for simple diatomics: Anharmonic-model distribution. International Journal of Quantum Chemistry, 2007, 107, 2632-2642.	2.0	10
16	Manyâ€body Brillouinâ€“Wigner secondâ€order perturbation theory: A robust and efficient approach to the multireference correlation problem. International Journal of Quantum Chemistry, 2007, 107, 2622-2631.	2.0	15
17	Many-body Brillouinâ€“Wigner second-order perturbation theory using a multireference formulation: an application to bond breaking in the diatomic hydrides BH and FH. Molecular Physics, 2006, 104, 2367-2386.	1.7	14
18	Distributed Gaussian basis sets: Variationally optimizeds-type sets for the open-shell systems HeH and BeH. International Journal of Quantum Chemistry, 2004, 99, 903-913.	2.0	24

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19	The Dirac equation in the algebraic approximation. IX. Matrix Dirac-Hartree-Fock calculations for the HeH and BeH ground states using distributed Gaussian basis sets. International Journal of Quantum Chemistry, 2004, 99, 950-962.	2.0	7
20	The Dirac equation in the algebraic approximation: VIII. Comparison of finite basis set and finite element molecular Dirac-Hartree-Fock calculations for the H2, LiH, and BH ground states. International Journal of Quantum Chemistry, 2002, 89, 227-236.	2.0	8
21	Distributed Gaussian basis sets: Variationally optimizeds-type sets for H2, LiH, and BH. International Journal of Quantum Chemistry, 2002, 89, 237-247.	2.0	26
22	Distributed Gaussian basis sets: Variationally optimized s-type sets. Advances in Quantum Chemistry, 2001, 39, 123-143.	0.8	24
23	On the use of Brillouin-Wigner perturbation theory for many-body systems. Journal of Physics B: Atomic, Molecular and Optical Physics, 2000, 33, 365-374.	1.5	69
24	On the application of hierarchical orthogonality restrictions to spin-coupled wave functions. International Journal of Quantum Chemistry, 1999, 74, 135-144.	2.0	5
25	Distributed Gaussian basis sets: A stochastic variational approach for diatomic molecules. International Journal of Quantum Chemistry, 1999, 74, 547-552.	2.0	9
26	Distributed Gaussian basis sets in correlation energy studies: the second order correlation energy for the ground state of the hydrogen molecule. Advances in Quantum Chemistry, 1998, , 157-172.	0.8	3
27	Distributed Gaussian Basis Sets: Some Recent Results and Prospects. Advances in Quantum Chemistry, 1997, , 47-63.	0.8	19
28	On the Accuracy of the Algebraic Approximation in Molecular Electronic Structure Studies: VII. Matrix Valence Bond Calculations for the Hydrogen Molecule Ground State. Topics in Molecular Organization and Engineering, 1997, , 323-341.	0.1	4
29	Distributed basis sets ofs-type Gaussian functions for molecular electronic structure calculations: Applications of the Gaussian cell model to one-electron polycentric linear molecular systems. International Journal of Quantum Chemistry, 1996, 60, 47-57.	2.0	17
30	On the accuracy of the algebraic approximation in molecular electronic structure calculations: V. Electron correlation in the ground state of the nitrogen molecule. Journal of Physics B: Atomic, Molecular and Optical Physics, 1996, 29, 2425-2451.	1.5	33
31	Distributed basis sets of s-type Gaussian functions in molecular electronic structure calculations. Part 2. The Gaussian cell model. Computational and Theoretical Chemistry, 1995, 357, 37-48.	1.5	14
32	Distributed Gaussian basis sets: description of the Hartree-Fock ground state energies of N2, CO and BF using s- and p-type Gaussian functions. Molecular Physics, 1995, 85, 103-120.	1.7	13
33	Distributed basis sets of s-type Gaussian functions in molecular electronic structure calculations. Molecular Physics, 1994, 82, 523-530.	1.7	27
34	A universal basis set for high-precision molecular electronic structure studies. Journal of Physics B: Atomic, Molecular and Optical Physics, 1994, 27, 1-13.	1.5	43
35	Finite basis set versus finite difference and finite element methods. Chemical Physics Letters, 1993, 209, 423-426.	2.6	51
36	Can the ground state energy of H+2be obtained to sub-microhartree accuracy with a basis set of s-type Gaussian functions?. Molecular Physics, 1993, 80, 461-467.	1.7	29

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37	On the accuracy of the algebraic approximation in molecular electronic structure calculations. I. Calculations for H2+, HeH2+, H2and HeH+using basis sets of atom-centred Gaussian-type functions. Journal of Physics B: Atomic, Molecular and Optical Physics, 1989, 22, 1285-1295.	1.5	59
38	van der Waals interaction potentials. Molecular Physics, 1986, 57, 21-32.	1.7	26
39	van der Waals interaction potentials. Molecular Physics, 1986, 57, 421-426.	1.7	17
40	Applicability of nondegenerate many-body perturbation theory to quasi-degenerate electronic states. II. A two-state model. International Journal of Quantum Chemistry, 1985, 28, 525-534.	2.0	50
41	Molecular multipole moment calculations using universal systematic sequences of even-tempered basis sets. Molecular Physics, 1985, 54, 445-453.	1.7	26
42	van der Waals interaction potentials. Molecular Physics, 1985, 55, 199-210.	1.7	47
43	Applicability of non-degenerate many-body perturbation theory to quasidegenerate electronic states: A model study. International Journal of Quantum Chemistry, 1983, 23, 1781-1802.	2.0	65
44	Scaling in second order electron correlation calculations of potential energy curves and spectroscopic constants. Molecular Physics, 1983, 50, 1323-1333.	1.7	6
45	Diagrammatic perturbation theory. Molecular Physics, 1983, 49, 1489-1493.	1.7	13
46	Universal evenâ€tempered basis sets for negative molecular ions. Journal of Chemical Physics, 1983, 78, 2456-2458.	3.0	17
47	van der Waals interaction potentials. Molecular Physics, 1983, 50, 1295-1309.	1.7	61
48	Diagrammatic perturbation theory: An application to the LiH and FH molecules using a universal evenâ€tempered basis set. Journal of Chemical Physics, 1982, 77, 3674-3675.	3.0	31
49	Universal systematic sequences of evenâ€tempered basis functions in electronic structure studies of negative ions. Journal of Chemical Physics, 1982, 77, 4551-4554.	3.0	16
50	Universal systematic sequence of evenâ€tempered exponentialâ€type functions in electronic structure studies. Journal of Chemical Physics, 1982, 77, 5053-5057.	3.0	21
51	Many-body perturbation theory for open-shell systems. Expansion through fourth-order. Theoretica Chimica Acta, 1982, 61, 343-361.	0.8	8
52	Noble gas molecular ions. Molecular Physics, 1981, 44, 161-172.	1.7	37
53	Finite-field many-body perturbation theory. Calculations of the dipole polarizability of the fluoride ion using electric-field-variant gaussian-type orbitals. Theoretica Chimica Acta, 1981, 60, 19-39.	0.8	33
54	On the contribution of triply-excited and quadruply-excited configurations to electron correlation energies in closed-shell systems. Molecular Physics, 1981, 43, 1331-1345.	1.7	13

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55	Scaling, PadÃ© approximants and variation principles in the many-body perturbation theory of atomic and molecular properties. Molecular Physics, 1981, 44, 299-317.	1.7	35
56	Theoretical study of SiO2-. Molecular Physics, 1981, 44, 799-802.	1.7	6
57	Systematic sequences of even-tempered Gaussian primitives in electron correlation studies using many-body perturbation theory. Theoretica Chimica Acta, 1980, 57, 53-61.	0.8	58
58	Universal systematic sequence of even-tempered Gaussian primitive functions in electronic correlation studies. Theoretica Chimica Acta, 1980, 58, 31-40.	0.8	61
59	Diagrammatic perturbation theory: An application to the nitrogen, carbon monoxide, and boron fluoride molecules using a universal evenâ€tempered basis set. Journal of Chemical Physics, 1980, 72, 2159-2165.	3.0	62
60	Theoretical studies of the HeCN+ and NeCN+ molecular ions. Journal of Chemical Physics, 1980, 73, 419-424.	3.0	17
61	Theoretical studies of interstellar radicals and ions. Chemical Reviews, 1980, 80, 263-267.	47.7	20
62	Direct evaluation of elements of the representation matrices of the spin permutation group for transpositions. Journal of Physics B: Atomic and Molecular Physics, 1979, 12, 339-344.	1.6	10
63	Comparison within the algebraic approximation of configuration interaction and many-body perturbation theory for the Be ground state. Physical Review A, 1979, 19, 1375-1382.	2.5	34
64	Fourth-Order terms in the diagrammatic perturbation expansion for the electronic energy of atoms and molecules. International Journal of Quantum Chemistry, 1979, 15, 683-692.	2.0	49
65	Universal basis sets and transferability of integrals. International Journal of Quantum Chemistry, 1978, 14, 635-639.	2.0	81
66	On the group function model for molecular electronic structure. Molecular Physics, 1978, 35, 1381-1396.	1.7	6
67	Theoretical study of the thioformyl ion. Astrophysical Journal, 1978, 220, 739.	4.5	18
68	Diagrammatic perturbation theory: N2Xâ€‰1Î£+g. Journal of Chemical Physics, 1977, 67, 1689-1696.	3.0	31
69	Diagrammatic perturbation theory: Manyâ€body effects in the X1Î£+ states of firstâ€row and secondâ€row diatomic hydrides. Journal of Chemical Physics, 1977, 66, 5400-5411.	3.0	62
70	Many-body effects in the X1Ïƒ+states of the hydrogen fluoride, lithium fluoride and boron fluoride molecules. Molecular Physics, 1977, 33, 1177-1193.	1.7	43
71	Transformation matrices for representations of the spin permutation group. A graphical approach. Chemical Physics Letters, 1977, 49, 168-173.	2.6	12
72	Third-order many-body perturbation theory for the ground state of the carbon monoxide molecule. International Journal of Quantum Chemistry, 1977, 12, 737-757.	2.0	21

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73	Theoretical study of the butadiynyl and cyanoethynyl radicals - Support for the identification of C3N in IRC + 10216. Astrophysical Journal, 1977, 212, L87.	4.5	46
74	The group function model. A set of orthogonality conditions. Journal of Chemical Physics, 1976, 64, 1692-1696.	3.0	21
75	Algebraic approximation in many-body perturbation theory. Physical Review A, 1976, 14, 1949-1960.	2.5	164
76	A self-consistent pair function study of the equilibrium bond angle of the water molecule. Molecular Physics, 1975, 30, 789-795.	1.7	20
77	The electronic structure of the diborane molecule. Molecular Physics, 1975, 30, 765-775.	1.7	19
78	Calculation of potential energy curves for the ground state of the hydrogen molecule. Molecular Physics, 1975, 30, 777-787.	1.7	23