Harris J Silverstone

List of Publications by Year
in descending order

90	3,197	147726 31	155592 55
papers	citations	h-index	g-index

90	90	90	801
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Piecewise polynomial configuration interaction natural orbital study of 1â€‰s2 helium. Journal of Chemical Physics, 1979, 71, 4142-4163.	1.2	234
2	Long-Range Behavior of Hartree-Fock Orbitals. Physical Review, 1969, 180, 45-48.	2.7	226
3	Manyâ€Electron Theory of Nonclosedâ€Shell Atoms and Molecules. I. Orbital Wavefunction and Perturbation Theory. Journal of Chemical Physics, 1966, 44, 1899-1907.	1.2	199
4	Modified Perturbation Theory for Atoms and Molecules Based on a Hartreeâ€“Fock Ï†0. Journal of Chemical Physics, 1968, 49, 2026-2030.	1.2	155
5	Perturbation theory of the Stark effect in hydrogen to arbitrarily high order. Physical Review A, 1978, 18, 1853-1864.	1.0	150
6	Theory of the ionization of the hydrogen atom by an external electrostatic field. Physical Review A, 1977, 16, 877-890.	1.0	138
7	Manyâ€Electron Theory of Nonclosedâ€Shell Atoms and Molecules. II. Variational Theory. Journal of Chemical Physics, 1966, 44, 3608-3617.	1.2	100
8	Stark Effect in Hydrogen: Dispersion Relation, Asymptotic Formulas, and Calculation of the Ionization Rate via High-Order Perturbation Theory. Physical Review Letters, 1979, 43, 1498-1501.	2.9	90
9	1/Rexpansion forH2+: Calculation of exponentially small terms and asymptotics. Physical Review A, 1986, 33, 12-54.	1.0	90
10	On the Evaluation of Twoâ€Center Overlap and Coulomb Integrals with Nonintegerâ€n Slaterâ€Type Orbitals. Journal of Chemical Physics, 1966, 45, 4337-4341.	1.2	84
11	Expansion about an Arbitrary Point of Threeâ€Dimensional Functions Involving Spherical Harmonics by the Fourierâ€Transform Convolution Theorem. Journal of Chemical Physics, 1967, 47, 537-540.	1.2	81
12	Complex energies from real perturbation series for the LoSurdo-Stark effect in hydrogen by Borel-PadÃ© approximants. Physical Review A, 1985, 32, 1338-1340.	1.0	77
13	Piecewise polynomial electronic wavefunctions. Journal of Chemical Physics, 1977, 67, 1887.	1.2	69
14	Unified Treatment of Twoâ€Center Overlap, Coulomb, and Kineticâ€Energy Integrals. Journal of Chemical Physics, 1970, 53, 3951-3956.	1.2	66
15	JWKB Connection-Formula Problem Revisited via Borel Summation. Physical Review Letters, 1985, 55, 2523-2526.	2.9	64
16	High-order perturbation theory of the imaginary part of the resonance eigenvalues of the Stark effect in hydrogen and of the anharmonic oscillator with negative anharmonicity. Physical Review A, 1981, 24, 1925-1934.	1.0	57
17	Expansion of a function about a displaced center. Physical Review A, 1977, 16, 1731-1732.	1.0	45
18	Analytical Evaluation of Multicenter Integrals of r12â^'â€‰1 with Slaterâ€Type Atomic Orbitals. I. (1â€2)â€Type Threeâ€Center Integrals. Journal of Chemical Physics, 1968, 48, 4098-4106.	1.2	43

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19	Study of Molecular Orbital Degeneracy in C7H7. Journal of Chemical Physics, 1964, 41, 2311-2323.	1.2	42
20	Asymptotic behavior of atomic Hartreeâ€“Fock orbitals. Journal of Chemical Physics, 1980, 73, 3936-3938.	1.2	42
21	Simulation of the EMR Spectra of High-Spin Iron in Proteins. Biological Magnetic Resonance, 1993, , 1-57.	0.4	41
22	Dirac Delta Functions in the Laplaceâ€Type Expansion of rnYlm(Î¸, Ï†). Journal of Chemical Physics, 1969, 51, 2359-2362.	1.2	39
23	Photoionization of atomic hydrogen in an electric field. Physical Review A, 1991, 44, 3060-3082.	1.0	39
24	Analytical Evaluation of Multicenter Integrals of r12â^'1 with Slaterâ€Type Atomic Orbitals. V. Fourâ€Center Integrals by Fourierâ€Transform Method. Journal of Chemical Physics, 1969, 51, 4287-4304.	1.2	37
25	Long-range behavior of electronic wave functions. Generalized Carlson-Keller expansion. Physical Review A, 1981, 23, 1030-1037.	1.0	36
26	Asymptotics of high-order perturbation theory for the one-dimensional anharmonic oscillator by quasisemiclassical methods. Physical Review A, 1985, 32, 1965-1980.	1.0	36
27	Calculation of Stark effect energy shifts by Pade approximants of Rayleigh Schrodinger perturbation theory. Journal of Physics B: Atomic and Molecular Physics, 1979, 12, L537-L541.	1.6	34
28	Analytical Evaluation of Multicenter Integrals of r12â^'1with Slaterâ€Type Atomic Orbitals. II. (2â€“2)â€Type Threeâ€Center Integrals. Journal of Chemical Physics, 1968, 48, 4106-4108.	1.2	33
29	Practical recursive solution of degenerate Rayleigh-SchrÃ¶dinger perturbation theory and application to high-order calculations of the Zeeman effect in hydrogen. Physical Review A, 1981, 23, 1645-1654.	1.0	32
30	Observations on the summability of confluent hypergeometric functions and on semiclassical quantum mechanics. Physical Review A, 1985, 32, 1341-1345.	1.0	32
31	Bipolar Expansion for r12nYlm(Î¸12, Ï†12). Journal of Chemical Physics, 1969, 51, 2363-2367.	1.2	31
32	1RExpansion forH2+: Analyticity, Summability, Asymptotics, and Calculation of Exponentially Small Terms. Physical Review Letters, 1984, 52, 1112-1115.	2.9	29
33	Analytical Evaluation of Multicenter Integrals of r12â^'1 with Slaterâ€Type Atomic Orbitals. III. (2â€“2)â€Type Threeâ€Center Integrals. Journal of Chemical Physics, 1968, 48, 4108-4115.	1.2	28
34	Series Expansion for Twoâ€Center Nonintegerâ€n Overlap Integrals. Journal of Chemical Physics, 1967, 46, 4368-4376.	1.2	26
35	Explicit Solution for the Wavefunction and Energy in Degenerate Rayleighâ€“SchrÃ¶dinger Perturbation Theory. Journal of Chemical Physics, 1971, 54, 2325-2335.	1.2	26
36	A new method to sum divergent power series: educated match. Journal of Physics Communications, 2017, 1, 025005.	0.5	26

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37	Bender-Wu formulas for degenerate eigenvalues. Physical Review A, 1980, 21, 1914-1916.	1.0	25
38	The 1R expansion for H2+: Analyticity, summability, and asymptotics. Annals of Physics, 1985, 165, 441-483.	1.0	25
39	Toward a Better 2pï€-Atomic Orbital for ï€-Electron Theory1. Journal of the American Chemical Society, 1966, 88, 1325-1327.	6.6	24
40	Explicit Formulas inDegenerateRayleigh-SchrÃ¶dinger Perturbation Theory for the Energy and Wave Function, Based on a Formula of Lagrange. Physical Review A, 1971, 4, 2191-2199.	1.0	24
41	Transition from classical mechanics to quantum mechanics:x4perturbed harmonic oscillator. Physical Review A, 1988, 38, 1687-1696.	1.0	23
42	Valence States of Carbon in Ï€â€Electron Systems. I. Alternantâ€Hydrocarbon Ground States. Journal of Chemical Physics, 1967, 47, 1384-1392.	1.2	22
43	LoSurdo-Stark effect for a hydrogenic impurity in a thin layer: Two-dimensional model. Physical Review B, 1987, 35, 2513-2516.	1.1	22
44	Rational function approximation for atomic and molecular wave functions. International Journal of Quantum Chemistry, 1969, 3, 1067-1068.	1.0	21
45	Piecewise polynomial basis functions for configuration interaction and manyâ€body perturbation theory calculations. The radial limit of helium. Journal of Chemical Physics, 1978, 68, 616-618.	1.2	21
46	Simulation Methods for Looping Transitions. Journal of Magnetic Resonance, 1998, 134, 57-66.	1.2	21
47	Pseudoâ€eigenvalue equation for natural orbitals of twoâ€electron systems and long range behavior. Journal of Chemical Physics, 1979, 70, 5919-5921.	1.2	20
48	Explicit Formulas for the Nthâ€Order Wavefunction and Energy in Nondegenerate Rayleighâ€“SchrÃ¶dinger Perturbation Theory. Journal of Chemical Physics, 1970, 52, 1472-1475.	1.2	19
49	Analytical Evaluation of Multicenter Integrals of r12â^'1 with Slaterâ€Type Atomic Orbitals VI. Asymptotic Expansions for Large Internuclear Distances. Journal of Chemical Physics, 1970, 53, 4269-4285.	1.2	17
50	Analytical Evaluation of Multicenter Integrals of r12â^'1 with Slaterâ€Type Atomic Orbitals IV. Fourâ€Center Integrals by Taylor Series Method. Journal of Chemical Physics, 1969, 51, 956-961.	1.2	16
51	Unified derivation of the perturbation series for the real and imaginary parts of the energy of hydrogen in the stark effect and of the negatively anharmonic oscillator. International Journal of Quantum Chemistry, 1982, 21, 125-131.	1.0	16
52	Classical resonance overlapping and quantum avoided crossings. Physical Review Letters, 1987, 59, 255-258.	2.9	16
53	Observations on the JWKB treatment of the quadratic barrier. , 2008, , 237-250.		16
54	Resonance contributions to the photoionization spectrum of atomic hydrogen in an electric field. Physical Review Letters, 1989, 63, 1364-1367.	2.9	15

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55	Hartreeâ€“Fock equations for open shell states. Journal of Chemical Physics, 1999, 67, 4172.	1.2	14
56	Anharmonic oscillator discontinuity formulae up to second-exponentially-small order. Journal of Physics A, 2002, 35, 4003-4016.	1.6	14
57	Energy Differences and Parr's Integral Hellmannâ€"Feynman Theorem. Journal of Chemical Physics, 1965, 43, 4537-4539.	1.2	13
58	Symmetry Properties of Oneâ€•and Twoâ€Electron Correlation Functions in the Manyâ€Electron Theory of Atoms and Molecules. Journal of Chemical Physics, 1967, 46, 854-859.	1.2	13
59	Kinetic-Energy Expectation Values with Discontinuous Approximate Wave Functions. Physical Review A, 1972, 5, 1092-1093.	1.0	13
60	Perturbation theory of resonant states induced by an electrostatic field: one-dimensional model. Journal of Physics B: Atomic and Molecular Physics, 1977, 10, 2083-2100.	1.6	13
61	Dispersive hyperasymptotics and the anharmonic oscillator. Journal of Physics A, 2002, 35, 4017-4042.	1.6	13
62	JWKB method as an exact technique. International Journal of Quantum Chemistry, 2004, 99, 336-352.	1.0	13
63	Large-field behavior of the LoSurdo-Stark resonances in atomic hydrogen. Physical Review A, 1994, 50, 4679-4699.	1.0	12
64	Series Expansion for Twoâ€Center Nonintegerâ€n Coulomb Integrals. Journal of Chemical Physics, 1967, 46, 4377-4380.	1.2	11
65	Convergence Properties of Certain Formulas for Multicenter Electron Repulsion Integrals Obtained from the Bipolar Expansion of r12â^'1. Journal of Chemical Physics, 1969, 50, 5045-5047.	1.2	11
66	On the computation of (2-2) three-center Slater-type orbital integrals of 1/r12 using Fourier-transform-based analytical formulas. International Journal of Quantum Chemistry, 2004, 100, 146-154.	1.0	11
67	EPR spectroscopy of interdoublet transitions in high-spin iron: applications to transferrin oxalate. The Journal of Physical Chemistry, 1993, 97, 3028-3033.	2.9	10
68	ANALYTICAL EVALUATION OF THREE- AND FOUR-CENTER INTEGRALS OF r12-1 WITH SLATER-TYPE ORBITALS. Proceedings of the National Academy of Sciences of the United States of America, 1967, 58, 34-36.	3.3	9
69	Resonance overlapping in classical mechanics and avoided crossings in quantum mechanics. Physical Review A, 1988, 37, 2214-2219.	1.0	9
70	Photoionization cross section: Exact expansion over resonances and natural line shape. Physical Review A, 1989, 40, 3690-3697.	1.0	9
71	Rereading Langer's influential 1937 JWKB paper: the unnecessary Langer transformation; the two â„•s. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 495206.	0.7	9
72	Reality and complexity in asymptotic expansions for eigenvalues and eigenfunctions, with application to the JWKB connection-formula problem. International Journal of Quantum Chemistry, 1986, 29, 261-272.	1.0	8

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73	Energy Calculation by the Method of Local Moments. Journal of Chemical Physics, 1967, 47, 4824-4827.	1.2	7
74	Valence states of carbon in Ï€-electron systems. Molecular Physics, 1967, 13, 149-156.	0.8	7
75	On the summations involving Wigner rotation matrix elements. Journal of Mathematical Chemistry, 1998, 24, 123-132.	0.7	6
76	Two-Center Noninteger-n Overlap, Coulomb, and Kinetic Energy Integrals by Numerical Contour Integration. Journal of Physical Chemistry A, 2014, 118, 11971-11974.	1.1	6
77	Nonempirical Evaluation of Ï€â€Electron Chargeâ€Density Dependence of Proton Isotropic Hyperfine Coupling Constants. An Application of the Valenceâ€State Model. Journal of Chemical Physics, 1967, 46, 2854-2855.	1.2	5
78	Method of Local Configuration Interaction Applied to Electronic Systems. Hydrogen Atom and Hydrogen Molecule Ion. Journal of Chemical Physics, 1969, 51, 2932-2936.	1.2	4
79	On definitions of L convergence of atomic correlation energies. Journal of Chemical Physics, 1985, 82, 1969-1972.	1.2	4
80	Some Aspects of Electron Correlation in Openâ€Shell States. 21P and 23P Helium. Journal of Chemical Physics, 1968, 49, 3160-3164.	1.2	3
81	On the use of asymptotic expansions. Theoretica Chimica Acta, 1988, 73, 105-114.	0.9	3
82	On the Bidirectionality of the JWKB Connection Formula at a Linear Turning Point. Collection of Czechoslovak Chemical Communications, 2005, 70, 740-754.	1.0	3
83	Recent Progress on Three-Center Integrals Using Fourier-Transform-Based Analytical Formulas. , 1982, , 73-89.		2
84	Comment on â€œEvaluation of Threeâ€Center Nuclear Attraction Integralsâ€• Journal of Chemical Physics, 1970, 53, 2545-2546.	1.2	1
85	High-Order Perturbation Theory and its Application to Atoms in Strong Fields. NATO ASI Series Series B: Physics, 1990, , 295-307.	0.2	1
86	Complex Variable Theory. , 1975, , 151-260.		0
87	EXACT EXPANSION METHODS FOR ATOMIC HYDROGEN IN AN EXTERNAL ELECTROSTATIC FIELD: DIVERGENT PERTURBATION SERIES, BOREL SUMMABILITY, SEMICLASSICAL APPROXIMATION, AND EXPANSION OF PHOTOIONIZATION CROSS-SECTION OVER RESONANCE EIGENVALUES. Advanced Series in Physical Chemistry, 1995, , 589-641.	1.5	0
88	Analytical evaluation of three-center one-electron integrals of rNYML (Î¸,Ï•) with slater-type atomic orbitals. International Journal of Quantum Chemistry, 2009, 5, 371-383.	1.0	0
89	Convergence of the bipolar expansion for the coulomb potential. International Journal of Quantum Chemistry, 2014, 114, 1073-1078.	1.0	0
90	1/R Expansion for H2+: Analyticity, Summability, Asymptotics, and Calculation of Exponentially Small Terms. Current Physics Sources and Comments, 1990, , 297-300.	0.0	0