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	A new method to sum divergent power series: educated match. Journal of Physics Communications, 2017, 1, 025005.	0.5	26
2	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
3	Convergence of the bipolar expansion for the coulomb potential. International Journal of Quantum Chemistry, 2014, 114, 1073-1078.	1.0	0
4	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
5	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
6	Observations on the JWKB treatment of the quadratic barrier. , 2008, , 237-250.		16
7	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
8	JWKB method as an exact technique. International Journal of Quantum Chemistry, 2004, 99, 336-352.	1.0	13
9	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
10	Dispersive hyperasymptotics and the anharmonic oscillator. Journal of Physics A, 2002, 35, 4017-4042.	1.6	13
11	Anharmonic oscillator discontinuity formulae up to second-exponentially-small order. Journal of Physics A, 2002, 35, 4003-4016.	1.6	14
12	Hartreeâ€“Fock equations for open shell states. Journal of Chemical Physics, 1999, 67, 4172.	1.2	14
13	On the summations involving Wigner rotation matrix elements. Journal of Mathematical Chemistry, 1998, 24, 123-132.	0.7	6
14	Simulation Methods for Looping Transitions. Journal of Magnetic Resonance, 1998, 134, 57-66.	1.2	21
15	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
16	Large-field behavior of the LoSurdo-Stark resonances in atomic hydrogen. Physical Review A, 1994, 50, 4679-4699.	1.0	12
17	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
18	Simulation of the EMR Spectra of High-Spin Iron in Proteins. Biological Magnetic Resonance, 1993, , 1-57.	0.4	41

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19	Photoionization of atomic hydrogen in an electric field. Physical Review A, 1991, 44, 3060-3082.	1.0	39
20	High-Order Perturbation Theory and its Application to Atoms in Strong Fields. NATO ASI Series Series B: Physics, 1990, , 295-307.	0.2	1
21	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
22	Resonance contributions to the photoionization spectrum of atomic hydrogen in an electric field. Physical Review Letters, 1989, 63, 1364-1367.	2.9	15
23	Photoionization cross section: Exact expansion over resonances and natural line shape. Physical Review A, 1989, 40, 3690-3697.	1.0	9
24	On the use of asymptotic expansions. Theoretica Chimica Acta, 1988, 73, 105-114.	0.9	3
25	Resonance overlapping in classical mechanics and avoided crossings in quantum mechanics. Physical Review A, 1988, 37, 2214-2219.	1.0	9
26	Transition from classical mechanics to quantum mechanics:x4perturbed harmonic oscillator. Physical Review A, 1988, 38, 1687-1696.	1.0	23
27	LoSurdo-Stark effect for a hydrogenic impurity in a thin layer: Two-dimensional model. Physical Review B, 1987, 35, 2513-2516.	1.1	22
28	Classical resonance overlapping and quantum avoided crossings. Physical Review Letters, 1987, 59, 255-258.	2.9	16
29	1/Rexpansion forH2+: Calculation of exponentially small terms and asymptotics. Physical Review A, 1986, 33, 12-54.	1.0	90
30	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
31	The 1R expansion for H2+: Analyticity, summability, and asymptotics. Annals of Physics, 1985, 165, 441-483.	1.0	25
32	Observations on the summability of confluent hypergeometric functions and on semiclassical quantum mechanics. Physical Review A, 1985, 32, 1341-1345.	1.0	32
33	JWKB Connection-Formula Problem Revisited via Borel Summation. Physical Review Letters, 1985, 55, 2523-2526.	2.9	64
34	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
35	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
36	On definitions of L convergence of atomic correlation energies. Journal of Chemical Physics, 1985, 82, 1969-1972.	1.2	4

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37	1RExpansion forH2+: Analyticity, Summability, Asymptotics, and Calculation of Exponentially Small Terms. Physical Review Letters, 1984, 52, 1112-1115.	2.9	29
38	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
39	Recent Progress on Three-Center Integrals Using Fourier-Transform-Based Analytical Formulas. , 1982, , 73-89.		2
40	Long-range behavior of electronic wave functions. Generalized Carlson-Keller expansion. Physical Review A, 1981, 23, 1030-1037.	1.0	36
41	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
42	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
43	Bender-Wu formulas for degenerate eigenvalues. Physical Review A, 1980, 21, 1914-1916.	1.0	25
44	Asymptotic behavior of atomic Hartreeâ€“Fock orbitals. Journal of Chemical Physics, 1980, 73, 3936-3938.	1.2	42
45	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
46	Piecewise polynomial configuration interaction natural orbital study of 1â€‰s2 helium. Journal of Chemical Physics, 1979, 71, 4142-4163.	1.2	234
47	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
48	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
49	Perturbation theory of the Stark effect in hydrogen to arbitrarily high order. Physical Review A, 1978, 18, 1853-1864.	1.0	150
50	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
51	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
52	Theory of the ionization of the hydrogen atom by an external electrostatic field. Physical Review A, 1977, 16, 877-890.	1.0	138
53	Piecewise polynomial electronic wavefunctions. Journal of Chemical Physics, 1977, 67, 1887.	1.2	69
54	Expansion of a function about a displaced center. Physical Review A, 1977, 16, 1731-1732.	1.0	45

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55	Complex Variable Theory. , 1975, , 151-260.		0
56	Kinetic-Energy Expectation Values with Discontinuous Approximate Wave Functions. Physical Review A, 1972, 5, 1092-1093.	1.0	13
57	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
58	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
59	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
60	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
61	Unified Treatment of Twoâ€Center Overlap, Coulomb, and Kineticâ€Energy Integrals. Journal of Chemical Physics, 1970, 53, 3951-3956.	1.2	66
62	Comment on â€œEvaluation of Threeâ€Center Nuclear Attraction Integralsâ€. Journal of Chemical Physics, 1970, 53, 2545-2546.	1.2	1
63	Long-Range Behavior of Hartree-Fock Orbitals. Physical Review, 1969, 180, 45-48.	2.7	226
64	Rational function approximation for atomic and molecular wave functions. International Journal of Quantum Chemistry, 1969, 3, 1067-1068.	1.0	21
65	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
66	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
67	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
68	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
69	Bipolar Expansion for r12nYlm(Î¸12, Ï†12). Journal of Chemical Physics, 1969, 51, 2363-2367.	1.2	31
70	Dirac Delta Functions in the Laplaceâ€Type Expansion of rnYlm(Î¸, Ï†). Journal of Chemical Physics, 1969, 51, 2359-2362.	1.2	39
71	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
72	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

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73	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
74	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
75	Some Aspects of Electron Correlation in Openâ€Shell States. 21P and 23P Helium. Journal of Chemical Physics, 1968, 49, 3160-3164.	1.2	3
76	Energy Calculation by the Method of Local Moments. Journal of Chemical Physics, 1967, 47, 4824-4827.	1.2	7
77	Series Expansion for Twoâ€Center Nonintegerâ€n Overlap Integrals. Journal of Chemical Physics, 1967, 46, 4368-4376.	1.2	26
78	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
79	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
80	Series Expansion for Twoâ€Center Nonintegerâ€n Coulomb Integrals. Journal of Chemical Physics, 1967, 46, 4377-4380.	1.2	11
81	Valence states of carbon in Ï€-electron systems. Molecular Physics, 1967, 13, 149-156.	0.8	7
82	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
83	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
84	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
85	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
86	Toward a Better 2pÏ€-Atomic Orbital for Ï€-Electron Theory1. Journal of the American Chemical Society, 1966, 88, 1325-1327.	6.6	24
87	Manyâ€Electron Theory of Nonclosedâ€Shell Atoms and Molecules. II. Variational Theory. Journal of Chemical Physics, 1966, 44, 3608-3617.	1.2	100
88	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
89	Energy Differences and Parr's Integral Hellmannâ€"Feynman Theorem. Journal of Chemical Physics, 1965, 43, 4537-4539.	1.2	13
90	Study of Molecular Orbital Degeneracy in C7H7. Journal of Chemical Physics, 1964, 41, 2311-2323.	1.2	42