

A R P Rau

List of Publications by Year in descending order

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132
papers

5,153
citations

109264

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69
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138
all docs

138
docs citations

138
times ranked

1808
citing authors

#	ARTICLE	IF	CITATIONS
1	A tale of two representations: energy and time in photoabsorption. Physica Scripta, 2021, 96, 094010.	1.2	1
2	Symmetries and Geometries of Qubits, and Their Uses. Symmetry, 2021, 13, 1732.	1.1	2
3	Mapping qubit algebras to combinatorial designs. Quantum Information Processing, 2020, 19, 1.	1.0	4
4	Calculation of quantum discord in higher dimensions for X- and other specialized states. Quantum Information Processing, 2018, 17, 1.	1.0	17
5	Entanglement dynamics of two nitrogen vacancy centers coupled by a nanomechanical resonator. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 055007.	0.6	3
6	Shared symmetries of the hydrogen atom and the two-bit system. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 242001.	0.6	4
7	Manipulation of entanglement sudden death in an all-optical setup. Journal of the Optical Society of America B: Optical Physics, 2017, 34, 681.	0.9	15
8	What is physics? The individual and the universal, and seeing past the noise. Physics Essays, 2017, 30, 60-69.	0.1	1
9	The Rosetta-Philae cometmission as physics appreciation. Resonance, 2015, 20, 346-351.	0.2	0
10	Three-level spin system under decoherence-minimizing driving fields: Application to nitrogen-vacancy spin dynamics. Physical Review A, 2014, 90, .	1.0	22
11	Sudden change in dynamics of genuine multipartite entanglement of cavity-reservoir qubits. Physical Review A, 2014, 90, .	1.0	16
12	Entanglement and discord for qubits and higher spin systems. Pramana - Journal of Physics, 2014, 83, 231-240.	0.9	5
13	1-, 2-, AND 6-QUBITS, AND THE RAMANUJANâ€“NAGELL THEOREM. International Journal of Quantum Information, 2013, 11, 1350056.	0.6	3
14	Quantum discord for qubitâ€“qudit systems. Journal of Physics A: Mathematical and Theoretical, 2012, 45, 095303.	0.7	85
15	Topics in quantum physics with origins in astronomy: Two examples. American Journal of Physics, 2012, 80, 406-416.	0.3	4
16	Ugo Fano. 28 July 1912 â€” 13 February 2001. Biographical Memoirs of Fellows of the Royal Society, 2012, 58, 55-66.	0.1	2
17	Dimensions, nodes and phases in quantum numbers. Physica Scripta, 2011, 83, 018101.	1.2	0
18	Generalized Xstates of Nqubits and their symmetries. Physical Review A, 2010, 82, .	1.0	25

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19	Quantum discord for two-qubit X -states. Physical Review A, 2010, 81, .	1.0	722
20	Mapping two-qubit operators onto projective geometries. Physical Review A, 2009, 79, .	1.0	23
21	Bloch sphere-like construction of $SU(3)$ Hamiltonians using unitary integration. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 425303.	0.7	9
22	Some classes of nontrivial zeroes of angular momentum addition coefficients. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 175203.	0.7	9
23	R A Fisher, design theory, and the Indian connection. Journal of Biosciences, 2009, 34, 353-363.	0.5	8
24	Manipulating entanglement sudden death of two-qubit X -states in zero- and finite-temperature reservoirs. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 025501.	0.6	51
25	Algebraic characterization of X -states in quantum information. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 412002.	0.7	93
26	Hastening, delaying, or averting sudden death of quantum entanglement. Europhysics Letters, 2008, 82, 40002.	0.7	59
27	Geometric phases and Bloch-sphere constructions for $SU(N)$ with a complete description of the $SU(4)$ group. Physical Review A, 2008, 78, .	1.0	20
28	Altering the decay of quantum entanglement. Proceedings of SPIE, 2008, , .	0.8	0
29	Bloch Sphere like construction of $SU(3)$ Hamiltonians. , 2008, , .		0
30	Mazumdar, Rau, and Bhasin Reply:. Physical Review Letters, 2007, 99, .	2.9	3
31	Effective Hamiltonians in quantum physics: resonances and geometric phase. Physica Scripta, 2006, 74, C31-C35.	1.2	4
32	Efimov States and their Fano Resonances in a Neutron-Rich Nucleus. Physical Review Letters, 2006, 97, 062503.	2.9	48
33	Confined one-dimensional harmonic oscillator as a two-mode system. American Journal of Physics, 2006, 74, 394-403.	0.3	31
34	Geometric phase for N -level systems through unitary integration. Physical Review A, 2006, 74, .	1.0	19
35	Historical Notes on Feshbach and Shape Resonances. Physics Today, 2005, 58, 13-13.	0.3	4
36	Four-level and two-qubit systems, subalgebras, and unitary integration. Physical Review A, 2005, 71, .	1.0	24

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37	Time-dependent treatment of a general three-level system. <i>Physical Review A</i> , 2005, 71, .	1.0	18
38	Perspectives on the Fano Resonance Formula. <i>Physica Scripta</i> , 2004, 69, C10-C13.	1.2	68
39	Supersymmetry in quantum mechanics: an extended view. <i>Journal of Physics A</i> , 2004, 37, 10421-10427.	1.6	11
40	Decoherence in a driven three-level system. <i>Physical Review A</i> , 2003, 68, .	1.0	16
41	Embedding Dissipation and Decoherence in Unitary Evolution Schemes. <i>Physical Review Letters</i> , 2002, 89, 220405.	2.9	29
42	Biological scaling and physics. <i>Journal of Biosciences</i> , 2002, 27, 475-478.	0.5	28
43	Relations between parameters of density functional theories through exactly solvable many-fermion models. <i>Journal of Chemical Physics</i> , 2001, 114, 9754-9757.	1.2	2
44	Reply to "Comment on "Photodetachment in combined static and dynamic electric fields" ". <i>Physical Review A</i> , 2001, 64, .	1.0	8
45	Collisions near threshold in atomic and molecular physics. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2000, 33, R93-R140.	0.6	216
46	Dynamics of diamagnetic Zeeman states ionized by half-cycle pulses. <i>Physical Review A</i> , 2000, 61, .	1.0	8
47	Manipulating two-spin coherences and qubit pairs. <i>Physical Review A</i> , 2000, 61, .	1.0	35
48	Photodetachment in combined static and dynamic electric fields. <i>Physical Review A</i> , 2000, 61, .	1.0	12
49	Effective Potentials for High Rydberg States in a Magnetic Field. <i>Physics Essays</i> , 2000, 13, 400-407.	0.1	1
50	Pair-Rydberg Description of Doubly Excited States and the Six-Dimensional Coulomb Problem. <i>Physics Essays</i> , 2000, 13, 358-366.	0.1	0
51	Role of Negative Ion Resonances in Electron Scattering from Atoms and Molecules. <i>Australian Journal of Physics</i> , 1999, 52, 473.	0.6	14
52	The structure of triply excited, negative-ion resonances in the autoionizing region of helium. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1999, 32, 815-824.	0.6	13
53	Molecular Rydberg states. XI. Quantum defect analogies between molecules and rare gases. <i>Journal of Chemical Physics</i> , 1999, 67, 3940.	1.2	39
54	Unitary Integration of Quantum Liouville-Bloch Equations. <i>Physical Review Letters</i> , 1998, 81, 4785-4789.	2.9	27

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55	Pair-Rydberg description of doubly excited states: Diabatic evolution of correlation patterns. <i>Physical Review A</i> , 1997, 55, 2674-2685.	1.0	3
56	The quantum defect: Early history and recent developments. <i>American Journal of Physics</i> , 1997, 65, 221-225.	0.3	27
57	Uniqueness of the Airy packet in quantum mechanics. <i>American Journal of Physics</i> , 1996, 64, 1034-1035.	0.3	60
58	The negative ion of hydrogen. <i>Journal of Astrophysics and Astronomy</i> , 1996, 17, 113-145.	0.4	67
59	Effect of the ponderomotive potential on atomic energy differences. <i>Physical Review A</i> , 1996, 54, 717-720.	1.0	3
60	Excitation of high-lying pair-Rydberg states. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1995, 28, 5309-5315.	0.6	8
61	Dissecting the adiabatic invariant of atomic diamagnetism. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1994, 27, 2719-2723.	0.6	3
62	Electron-pair analysis for doubly excited ridge states. II.L=1. <i>Physical Review A</i> , 1993, 48, 3567-3577.	1.0	6
63	Electron-pair analysis for doubly excited ridge states. <i>Physical Review A</i> , 1992, 46, 6933-6941.	1.0	12
64	Excitation and Decay of Correlated Atomic States. <i>Science</i> , 1992, 258, 1444-1451.	6.0	10
65	The asymmetric rotor as a model for localization. <i>Reviews of Modern Physics</i> , 1992, 64, 623-632.	16.4	16
66	Quantum binding in low dimensions. <i>American Journal of Physics</i> , 1990, 58, 904-904.	0.3	1
67	Mapping degenerate perturbations in atoms onto an asymmetric rotor. <i>Physical Review A</i> , 1990, 42, 6342-6353.	1.0	27
68	Group theoretical treatments of strongly correlated atomic dynamics. <i>Reports on Progress in Physics</i> , 1990, 53, 181-220.	8.1	40
69	Localization and other common features of degenerate perturbations. <i>Physical Review Letters</i> , 1989, 63, 244-247.	2.9	13
70	Angular correlation between two slow electrons in a Coulomb field. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1989, 22, 189-198.	0.6	19
71	Pair basis functions for doubly excited ridge states. <i>Physical Review A</i> , 1988, 38, 4446-4454.	1.0	2
72	Semianalytic study of diamagnetism in a degenerate hydrogenic manifold. <i>Physical Review A</i> , 1988, 37, 3655-3665.	1.0	29

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73	Negative-ion photodetachment in an electric field. <i>Physical Review A</i> , 1988, 37, 2393-2403.	1.0	57
74	Electric-field-induced modulations in photodetachment. <i>Physical Review A</i> , 1988, 37, 632-635.	1.0	124
75	Relationships between the parameters of quantum-defect theory. <i>Physical Review A</i> , 1988, 38, 2255-2258.	1.0	10
76	A Unified View of Collisions and Spectra. <i>NATO ASI Series Series B: Physics</i> , 1988, , 51-77.	0.2	0
77	Implications of electron correlations for multiphoton excitation. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1987, 4, 784.	0.9	6
78	New patterns in atomic spectra. <i>Nature</i> , 1987, 325, 577-578.	13.7	7
79	Hyperspherical Coordinates for Electron Correlations. <i>Few-Body Systems</i> , 1987, , 309-322.	0.2	0
80	Supersymmetry in quantum mechanics. <i>American Journal of Physics</i> , 1986, 54, 928-936.	0.3	112
81	Comment on "Evidence for a phenomenological supersymmetry in atomic physics". <i>Physical Review Letters</i> , 1986, 56, 95-95.	2.9	13
82	Rydberg states in crossed fields: The gyropendulum. <i>Physical Review A</i> , 1986, 34, 4501-4503.	1.0	2
83	States of an Atomic Electron Pair. <i>NATO ASI Series Series B: Physics</i> , 1986, , 383-395.	0.2	2
84	Dipole threshold laws for single and double detachment from negative ions. <i>Physical Review A</i> , 1985, 32, 1352-1356.	1.0	25
85	Extra dimensions to remove singularities and determine fundamental constants. <i>American Journal of Physics</i> , 1985, 53, 1183-1186.	0.3	4
86	Elements of Quantum Defect Theory. I. Introduction and Formalism. , 1985, , 191-215.		1
87	Direct excitation of states of high l by electron impact. <i>Journal of Physics B: Atomic and Molecular Physics</i> , 1984, 17, L75-L78.	1.6	43
88	Unified treatment of radiative and dielectronic recombination. <i>Physical Review A</i> , 1984, 30, 2845-2848.	1.0	45
89	The Wannier theory for two electrons escaping from a positive ion. <i>Physics Reports</i> , 1984, 110, 369-387.	10.3	77
90	A unified formulation of the construction of variational principles. <i>Reviews of Modern Physics</i> , 1983, 55, 725-774.	16.4	110

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91	Effect of symmetry on two-electron escape at threshold. Journal of Physics B: Atomic and Molecular Physics, 1983, 16, 99-106.	1.6	113
92	A new Bohr-Rydberg spectrum of two-electron states. Journal of Physics B: Atomic and Molecular Physics, 1983, 16, L699-L705.	1.6	87
93	Multichannel quantum-defect theory of perturbed Rydberg atoms in external fields. Physical Review A, 1983, 28, 2623-2633.	1.0	10
94	Coulomb spectrum in crossed electric and magnetic fields: Eigenstates of motion in double-minimum potential wells. Physical Review A, 1982, 26, 2315-2321.	1.0	33
95	Double Escape of Two Electrons at Threshold: Dependence on L, S, and $\vec{\epsilon}$. Physical Review Letters, 1982, 48, 533-537.	2.9	145
96	General form of the quantum-defect theory. II. Physical Review A, 1982, 26, 2441-2459.	1.0	201
97	Group-Theoretic Approach to Two-Electron Correlations in Atoms. Physical Review Letters, 1981, 47, 501-504.	2.9	20
98	Comments on near-zero-energy resonance in atoms in external fields. Physical Review A, 1980, 21, 1057-1060.	1.0	32
99	Statistical fluctuations in the ionization yield and their relation to the electron degradation spectrum. Physical Review A, 1980, 22, 445-453.	1.0	27
100	Longitudinally excited states of hydrogen in intense magnetic fields. Physical Review A, 1980, 22, 321-323.	1.0	11
101	Applications of Quantum Defect Theory to Molecular Rydberg States ^{1,2} . Spectroscopy Letters, 1979, 12, 631-635.	0.5	1
102	Rydberg states in electric and magnetic fields: near-zero-energy resonances. Journal of Physics B: Atomic and Molecular Physics, 1979, 12, L193-L198.	1.6	80
103	Motional Stark Effect on Li Vapor Photoabsorption in High Magnetic Fields. Physical Review Letters, 1979, 42, 963-966.	2.9	41
104	Atomic spectral lines in helium containing a quark in the nucleus. Physical Review A, 1979, 19, 2147-2150.	1.0	2
105	Variational treatment of electron degradation and yields of initial molecular species. Physical Review A, 1978, 18, 971-988.	1.0	32
106	Effect of an electric field on autoionising states of H ⁻ . Journal of Physics B: Atomic and Molecular Physics, 1978, 11, L289-L291.	1.6	25
107	Atomic spectral lines when a quark is embedded in the nucleus. Physical Review A, 1978, 17, 1721-1728.	1.0	2
108	Phenomena exhibiting strong field mixing. Physical Review A, 1977, 16, 613-617.	1.0	59

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109	Threshold energy and angular distributions in multiple ionization. Journal of Physics B: Atomic and Molecular Physics, 1976, 9, L283-L288.	1.6	108
110	Antiparallel spin correlations in a many-electron system: A new approach. II. Physical Review B, 1976, 14, 3052-3057.	1.1	9
111	Cross between Born and WKB approximations: Variational solutions of nonlinear forms of the Schrödinger equation. Journal of Mathematical Physics, 1976, 17, 1338-1344.	0.5	5
112	Nonstatistical Branching Ratios in Atomic Processes. , 1976, , 141-148.		8
113	Energy levels of hydrogen in magnetic fields of arbitrary strength. Astrophysical Journal, 1976, 207, 671.	1.6	62
114	Antiparallel spin correlations in a many-electron system: A new approach. Physical Review B, 1975, 11, 3604-3613.	1.1	15
115	Lowest energy levels of $\text{H}^{\wedge^{\wedge}}$, He, and Li^+ in intense magnetic fields. Physical Review A, 1975, 11, 789-795.	1.0	54
116	Variational principles, variational identities, and supervariational principles for wavefunctions. Journal of Mathematical Physics, 1975, 16, 1104-1111.	0.5	16
117	Simple model and wave function for atoms in intense magnetic fields. Physical Review A, 1975, 11, 1865-1879.	1.0	60
118	Useful extremum principle for the variational calculation of matrix elements. Physical Review A, 1974, 9, 108-117.	1.0	31
119	Variational estimates of $\langle \hat{r}^{-1} \rangle$ for $q = 1, 1, \text{ and } \hat{A}^2$ for atoms with Z from 2 to 18. Physical Review A, 1974, 10, 1511-1518.	1.0	4
120	Variational Principles for the Ellipticity of Slowly Rotating Configurations. Monthly Notices of the Royal Astronomical Society, 1974, 168, 273-286.	1.6	3
121	Simple Atomic Model and its Associated Wave Function. Physical Review A, 1973, 8, 1186-1194.	1.0	16
122	Stationary and Quasistationary Bounds on Arbitrary Bound-State Matrix Elements. Physical Review A, 1973, 8, 131-137.	1.0	14
123	Constructing Variational Principles. Physical Review A, 1973, 8, 662-665.	1.0	34
124	Upper and Lower Bounds on Quantum-Mechanical Matrix Elements. Physical Review A, 1973, 8, 119-130.	1.0	32
125	Identities Related to Variational Principles. Journal of Mathematical Physics, 1972, 13, 1797-1804.	0.5	28
126	Magnetic Field Effects on the Outermost Crusts of Pulsars. Nature: Physical Science, 1971, 234, 31-33.	0.8	8

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127	Statistical Model of Atoms in Intense Magnetic Fields. Physical Review Letters, 1971, 26, 1136-1139.	2.9	95
128	Two Electrons in a Coulomb Potential. Double-Continuum Wave Functions and Threshold Law for Electron-Atom Ionization. Physical Review A, 1971, 4, 207-220.	1.0	321
129	Theory of Photodetachment near Fine-Structure Thresholds. Physical Review A, 1971, 4, 1751-1759.	1.0	98
130	Comments on the Alleged Validity of R4 Invariance as a Symmetry for Electron Correlations. Physical Review A, 1970, 2, 1600-1603.	1.0	8
131	Atomic Potential Wells and the Periodic Table. Physical Review, 1968, 167, 7-10.	2.7	95
132	Transition Matrix Elements for Large Momentum or Energy Transfer. Physical Review, 1967, 162, 68-70.	2.7	124