

David Farrelly

List of Publications by Year in descending order

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85
papers

1,596
citations

257450

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361022

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85
all docs

85
docs citations

85
times ranked

567
citing authors

#	ARTICLE	IF	CITATIONS
1	Statistical Theory of Asteroid Escape Rates. <i>Physical Review Letters</i> , 2002, 89, 011101.	7.8	111
2	Chaos-assisted capture of irregular moons. <i>Nature</i> , 2003, 423, 264-267.	27.8	88
3	Ionization Mechanism of Rydberg Atoms in a Circularly Polarized Microwave Field. <i>Physical Review Letters</i> , 1995, 74, 1720-1723.	7.8	60
4	Lie algebraic approach to quantization of nonseparable systems with internal nonlinear resonance. <i>Journal of Chemical Physics</i> , 1986, 85, 2119-2131.	3.0	56
5	Transition state in atomic physics. <i>Physical Review A</i> , 1999, 60, 3833-3850.	2.5	55
6	Ionization of Rydberg atoms by circularly and elliptically polarized microwave fields. <i>Physical Review A</i> , 1992, 45, R2678-R2681.	2.5	50
7	Semiclassical quantization of slightly nonresonant systems: Avoided crossings, dynamical tunneling, and molecular spectra. <i>Journal of Chemical Physics</i> , 1986, 85, 308-318.	3.0	46
8	Nonstationary, Nondispersive Wave Packets in a Rydberg Atom. <i>Physical Review Letters</i> , 1996, 76, 2874-2877.	7.8	45
9	Production of trans-Neptunian binaries through chaos-assisted capture. <i>Monthly Notices of the Royal Astronomical Society</i> , 2007, 379, 229-246.	4.4	40
10	Electronic structure of Rydberg atoms in parallel electric and magnetic fields. <i>Physical Review A</i> , 1992, 45, 4738-4751.	2.5	38
11	Two-frequency control and suppression of tunneling in the driven double well. <i>Physical Review E</i> , 1993, 47, R2225-R2228.	2.1	34
12	Magnetic field stabilization of Rydberg, Gaussian wave packets in a circularly polarized microwave field. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1995, 204, 359-372.	2.1	34
13	Hydrogen atom in a strong magnetic field: Semiclassical quantization using classical adiabatic invariance. <i>Physical Review A</i> , 1987, 36, 3556-3574.	2.5	32
14	Hydrogen atom in circularly polarized microwaves: Chaotic ionization via core scattering. <i>Physical Review A</i> , 1997, 55, 3730-3745.	2.5	32
15	Threshold ionization dynamics of the hydrogen atom in crossed electric and magnetic fields. <i>Physical Review A</i> , 1995, 52, R2501-R2504.	2.5	31
16	Comment on "Lagrange Equilibrium Points in Celestial Mechanics and Nonspreading Wave Packets for Strongly Driven Rydberg Electrons". <i>Physical Review Letters</i> , 1995, 75, 972-972.	7.8	31
17	Fractal Weyl law behavior in an open Hamiltonian system. <i>Physical Review E</i> , 2009, 80, 055201.	2.1	30
18	Large-Order Perturbation Theory in the Stark-Zeeman Effect for Parallel Fields. <i>Physical Review Letters</i> , 1983, 51, 2280-2283.	7.8	28

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19	Coherent states in a Rydberg atom: Classical mechanics. <i>Physical Review A</i> , 1997, 55, 2203-2221.	2.5	28
20	Single Atom Quasi-Penning Trap. <i>Physical Review Letters</i> , 1995, 75, 3641-3644.	7.8	26
21	Comment on "Regular and chaotic motions in ion traps: A nonlinear analysis of trap equations". <i>Physical Review A</i> , 1993, 48, 851-853.	2.5	25
22	Double-well dynamics of two ions in the Paul and Penning traps. <i>Physical Review A</i> , 1994, 49, 1494-1497.	2.5	25
23	Motional stark effect on Rydberg states in crossed electric and magnetic fields. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1994, 191, 265-274.	2.1	25
24	Integrability of the Paul trap and generalized van der Waals Hamiltonians. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 178, 62-72.	2.1	24
25	Collisional population of ultra-high, ultra-long-living Rydberg states under zero-electron-kinetic-energy conditions. <i>Journal of Chemical Physics</i> , 1997, 107, 2499-2515.	3.0	24
26	Semiclassical mechanics of the quadratic Zeeman effect. <i>Physical Review A</i> , 1992, 45, 3093-3103.	2.5	23
27	Quantum-classical correspondence in the hydrogen atom in weak external fields. <i>Physical Review A</i> , 1998, 58, 3896-3913.	2.5	22
28	1/r Dynamics in External Fields: 2D or 3D?. <i>Physical Review Letters</i> , 1997, 78, 2349-2352.	7.8	21
29	Highly excited states of HCN: The probable applicability of classical dynamics. <i>Journal of Chemical Physics</i> , 1983, 78, 606-608.	3.0	18
30	Coherent states in a Rydberg atom: Quantum mechanics. <i>Physical Review A</i> , 1997, 55, 2222-2231.	2.5	18
31	Determination of tunneling rates in bound systems using the complex coordinate method. <i>Journal of Chemical Physics</i> , 1989, 91, 6246-6253.	3.0	17
32	Atomic analogs of local and normal modes: The hydrogen atom in a generalized van der Waals potential. <i>Physical Review A</i> , 1993, 47, 3137-3150.	2.5	17
33	Role of the atomic Coulomb center in ionization and periodic orbit selection. <i>Physical Review A</i> , 1997, 56, 657-670.	2.5	17
34	A Saturnian atom. <i>Optics Express</i> , 1997, 1, 221.	3.4	17
35	Quantum solvation dynamics of HCN in a helium-4 droplet. <i>Journal of Chemical Physics</i> , 2006, 125, 014312.	3.0	17
36	Dynamical symmetry of the quadratic Zeeman effect in hydrogen: Semiclassical quantization. <i>Physical Review A</i> , 1991, 43, 1666-1668.	2.5	16

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37	Frequency Analysis of 3D Electronic Dynamics: Tuning between Order and Chaos. <i>Physical Review Letters</i> , 1997, 78, 1436-1439.	7.8	16
38	Nondispersive Two-Electron Wave Packets in a Helium Atom. <i>Physical Review Letters</i> , 2005, 95, 103001.	7.8	16
39	Normalization and the detection of integrability: The generalized Van Der Waals potential. <i>Celestial Mechanics and Dynamical Astronomy</i> , 1995, 61, 71-95.	1.4	15
40	Renormalization of the rotational constants of an ammonia molecule seeded into a 4He droplet. <i>Chemical Physics Letters</i> , 2011, 502, 14-22.	2.6	15
41	Core-induced stabilization and autoionization of molecular Rydberg states. <i>Chemical Physics Letters</i> , 1994, 231, 241-245.	2.6	14
42	Phase space structure of the hydrogen atom in a circularly polarized microwave field. <i>Physica D: Nonlinear Phenomena</i> , 2012, 241, 333-349.	2.8	14
43	Refined <i>ab initio</i> intermolecular ground-state potential energy surface for the He-C ₂ H ₂ van der Waals complex. <i>Molecular Physics</i> , 2013, 111, 1173-1177.	1.7	14
44	A generalized semiclassical self-consistent-field procedure for non-separable vibrationally bound states. <i>The Journal of Physical Chemistry</i> , 1986, 90, 1599-1603.	2.9	13
45	Excitation and Stability of Ultrahigh Rydberg States in Stray Electric Fields. <i>Journal of Physical Chemistry A</i> , 1997, 101, 8902-8907.	2.5	13
46	Ionization of Rydberg atoms by Coriolis forces. <i>Physical Review A</i> , 1998, 58, 4761-4767.	2.5	12
47	Classical and quantum mechanics of an integrable limit of the hydrogen atom in combined circularly polarized microwave and magnetic fields. <i>Physical Review A</i> , 1998, 57, 2814-2831.	2.5	12
48	Rotational Structure of Small He ₄ Clusters Seeded with HF, HCl, and HBr Molecules. <i>Journal of Physical Chemistry A</i> , 2007, 111, 12275-12288.	2.5	12
49	Controlling Feature Selection in Random Forests of Decision Trees Using a Genetic Algorithm: Classification of Class I MHC Peptides. <i>Combinatorial Chemistry and High Throughput Screening</i> , 2009, 12, 514-519.	1.1	12
50	Fixed node diffusion Monte Carlo using a genetic algorithm: a study of the CO-HeN complex, N = 1-10. <i>Physical Chemistry Chemical Physics</i> , 2012, 14, 8123.	2.8	12
51	Towards an understanding of the helium-acetylene van der Waals complex. <i>Molecular Physics</i> , 2012, 110, 2743-2750.	1.7	12
52	Does an irregular sequence of level spacings provide a new representation of quantum chaos?. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1984, 104, 63-66.	2.1	11
53	Uniform semiclassical self-consistent field and adiabatic calculations of complex energy eigenvalues for nonseparable systems. <i>Journal of Chemical Physics</i> , 1986, 84, 6285-6292.	3.0	11
54	Pair-tunneling states in semiconductor quantum dots: Ground-state behavior in a magnetic field. <i>Physical Review B</i> , 1998, 57, 12281-12284.	3.2	11

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55	Thresholds to chaos and ionization for the hydrogen atom in rotating fields. <i>Physical Review A</i> , 2002, 65, .	2.5	11
56	Uniform semiclassical self-consistent-field calculations of vibrational resonance energies and widths. <i>Chemical Physics Letters</i> , 1983, 96, 599-603.	2.6	10
57	Accurate computations of the rovibrational spectrum of the He-HF van der Waals complex. <i>Molecular Physics</i> , 2006, 104, 1413-1420.	1.7	10
58	Action-angle variables for the diamagnetic Kepler problem. <i>Physical Review A</i> , 1992, 45, 8277-8279.	2.5	8
59	Anomalous autoionization lifetimes of Rydberg states in a circularly polarized microwave field. <i>Journal of Chemical Physics</i> , 1998, 108, 402-405.	3.0	8
60	Microscopic Superfluidity in ^4He Clusters Stirred by a Rotating Impurity Molecule. <i>Physical Review Letters</i> , 2014, 112, 143401.	7.8	8
61	Collisional intrashell transitions in alkali Rydberg atoms under zero-electron-kinetic-energy conditions. <i>Journal of Chemical Physics</i> , 1998, 108, 5295-5309.	3.0	7
62	Synthesis of a classical atom: Wavepacket analogues of the Trojan asteroids. <i>Contemporary Physics</i> , 2000, 41, 1-14.	1.8	7
63	Computation of nodal surfaces in fixed-node diffusion Monte Carlo calculations using a genetic algorithm. <i>Physical Chemistry Chemical Physics</i> , 2010, 12, 12450.	2.8	7
64	Saturation behavior of a far-wing satellite. <i>Journal of Chemical Physics</i> , 1983, 79, 1297-1300.	3.0	6
65	Comment on "Chaotic Autoionization of Molecular Rydberg States". <i>Physical Review Letters</i> , 1995, 74, 3495-3495.	7.8	6
66	Formation of the extreme Kuiper-belt binary 2001 QW322 through adiabatic switching of orbital elements. <i>Celestial Mechanics and Dynamical Astronomy</i> , 2010, 106, 245-259.	1.4	6
67	Resonance overlap structure in the microwave ionization of the hydrogen atom. <i>Physical Review A</i> , 1988, 38, 5902-5905.	2.5	5
68	Comment on "Circular Rydberg orbits in circularly polarized microwave radiation". <i>Physical Review A</i> , 1995, 51, 4293-4294.	2.5	5
69	The infrared spectrum of the He-C ₂ D ₂ complex. <i>Journal of Chemical Physics</i> , 2015, 142, 084312.	3.0	5
70	Evaluation of non-separable bound-bound Franck-Condon factors using the self-consistent field and adiabatic approximations. <i>Chemical Physics Letters</i> , 1988, 152, 196-202.	2.6	4
71	Comment on "Pair Tunneling in Semiconductor Quantum Dots". <i>Physical Review Letters</i> , 1998, 80, 3884-3884.	7.8	4
72	Chaos in the classical mechanics of bound and quasi-bound HX ⁺ He complexes with X = F, Cl, Br, CN. <i>Physical Chemistry Chemical Physics</i> , 2009, 11, 8203.	2.8	4

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73	Normalization of Resonant Hamiltonians. NATO ASI Series Series B: Physics, 1994, , 237-244.	0.2	4
74	Optical model of dissociative chemisorption: H ₂ on the (111), (110), and (100) faces of copper. Journal of Chemical Physics, 1992, 97, 2139-2148.	3.0	3
75	Semiclassical quantization of doubly excited intrashell resonances of the helium atom. Chemical Physics Letters, 1994, 217, 520-524.	2.6	3
76	Optical model computations of dissociative chemisorption. The Journal of Physical Chemistry, 1991, 95, 8279-8282.	2.9	2
77	Phase-space structure of the Penning trap with octupole perturbation. Physical Review A, 2002, 65, .	2.5	2
78	The infrared spectrum of the Ne ⁺ C ₂ D ₂ complex. Journal of Chemical Physics, 2015, 143, 204307.	3.0	2
79	Satellite capture as a restricted 2 ⁺ body problem. Advances in Space Research, 2018, 61, 2124-2134.	2.6	2
80	The Classical Atom: Stabilization of Electronic Trojan Wavepackets. Fortschritte Der Physik, 2002, 50, 636-641.	4.4	1
81	Comment on "Signature of classical chaos on quantum tunneling". Physical Review E, 1995, 51, 6313-6315.	2.1	0
82	Comment on "Saddle-point ionization and the Runge-Lenz invariant". Physical Review A, 1997, 55, 1550-1551.	2.5	0
83	On the fly nodal searches in importance sampled fixed-node diffusion Monte Carlo using a parallel, fine-grained, genetic algorithm. Chemical Physics Letters, 2015, 619, 71-76.	2.6	0
84	Lyapunov Stability for Lagrange Equilibria of Orbiting Dust. , 2001, , 247-252.		0
85	The Classical Atom: Stabilization of Electronic Trojan Wavepackets. , 0, , 207-212.		0