

David Farrelly

List of Publications by Year in descending order

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85
papers

1,596
citations

257450

24
h-index

361022

35
g-index

85
all docs

85
docs citations

85
times ranked

567
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 1 | Satellite capture as a restricted $2\text{-}\hat{\text{e}}^{-2}$ body problem. <i>Advances in Space Research</i> , 2018, 61, 2124-2134. | 2.6 | 2 |
| 2 | The infrared spectrum of the $\text{Ne}\hat{\text{e}}^{\text{C}}\text{2D2}$ complex. <i>Journal of Chemical Physics</i> , 2015, 143, 204307. | 3.0 | 2 |
| 3 | The infrared spectrum of the $\text{He}\hat{\text{e}}^{\text{C}}\text{2D2}$ complex. <i>Journal of Chemical Physics</i> , 2015, 142, 084312. | 3.0 | 5 |
| 4 | On the fly nodal searches in importance sampled fixed-node diffusion Monte Carlo using a parallel, fine-grained, genetic algorithm. <i>Chemical Physics Letters</i> , 2015, 619, 71-76. | 2.6 | 0 |
| 5 | Microscopic Superfluidity in $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \langle \text{mml:mrow} \langle \text{mml:mmultiscripts} \langle \text{mml:mrow} \langle \text{mml:mi} \rangle \text{He} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \langle \text{mml:mprescripts} / \rangle \langle \text{mml:none} / \rangle \langle \text{mml:mrow} \langle \text{mml:mn} \rangle 4 \langle \text{mml:mn} \rangle \langle \text{mml:mrow} \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mrow} \langle \text{mml:math} \rangle \text{Clusters Stirred by a Rotating Impurity Molecule. } \text{Physical Review Letters, 2014, 112, 143401.} \rangle \rangle \rangle \rangle \rangle$ | 7.8 | 8 |
| 6 | Refined <i>ab initio</i> intermolecular ground-state potential energy surface for the $\text{He}\hat{\text{e}}^{\text{C}}\text{2}\text{H}\text{2}$ van der Waals complex. <i>Molecular Physics</i> , 2013, 111, 1173-1177. | 1.7 | 14 |
| 7 | Fixed node diffusion Monte Carlo using a genetic algorithm: a study of the $\text{CO}\hat{\text{e}}^{\text{C}}\text{4HeN}$ complex, $N = 1\hat{\text{e}}\{10$. <i>Physical Chemistry Chemical Physics</i> , 2012, 14, 8123. | 2.8 | 12 |
| 8 | Towards an understanding of the helium $\hat{\text{e}}^{\text{C}}$ acetylene van der Waals complex. <i>Molecular Physics</i> , 2012, 110, 2743-2750. | 1.7 | 12 |
| 9 | 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 |
| 10 | 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 |
| 11 | 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 |
| 12 | 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 |
| 13 | Fractal Weyl law behavior in an open Hamiltonian system. <i>Physical Review E</i> , 2009, 80, 055201. | 2.1 | 30 |
| 14 | Chaos in the classical mechanics of bound and quasi-bound $\text{HX}\hat{\text{e}}^{\text{C}}\text{4He}$ complexes with $X = \text{F, Cl, Br, CN}$. <i>Physical Chemistry Chemical Physics</i> , 2009, 11, 8203. | 2.8 | 4 |
| 15 | 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 |
| 16 | Rotational Structure of Small He^{C}_4 Clusters Seeded with HF, HCl, and HBr Molecules. <i>Journal of Physical Chemistry A</i> , 2007, 111, 12275-12288. | 2.5 | 12 |
| 17 | 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 |
| 18 | Accurate computations of the rovibrational spectrum of the $\text{He}\hat{\text{e}}^{\text{C}}\text{HF}$ van der Waals complex. <i>Molecular Physics</i> , 2006, 104, 1413-1420. | 1.7 | 10 |

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|----|---|------|-----------|
| 19 | Quantum solvation dynamics of HCN in a helium-4 droplet. <i>Journal of Chemical Physics</i> , 2006, 125, 014312. | 3.0 | 17 |
| 20 | Nondispersive Two-Electron Wave Packets in a Helium Atom. <i>Physical Review Letters</i> , 2005, 95, 103001. | 7.8 | 16 |
| 21 | Chaos-assisted capture of irregular moons. <i>Nature</i> , 2003, 423, 264-267. | 27.8 | 88 |
| 22 | Statistical Theory of Asteroid Escape Rates. <i>Physical Review Letters</i> , 2002, 89, 011101. | 7.8 | 111 |
| 23 | Phase-space structure of the Penning trap with octupole perturbation. <i>Physical Review A</i> , 2002, 65, . | 2.5 | 2 |
| 24 | Thresholds to chaos and ionization for the hydrogen atom in rotating fields. <i>Physical Review A</i> , 2002, 65, . | 2.5 | 11 |
| 25 | The Classical Atom: Stabilization of Electronic Trojan Wavepackets. <i>Fortschritte Der Physik</i> , 2002, 50, 636-641. | 4.4 | 1 |
| 26 | Lyapunov Stability for Lagrange Equilibria of Orbiting Dust. , 2001, , 247-252. | | 0 |
| 27 | Synthesis of a classical atom: Wavepacket analogues of the Trojan asteroids. <i>Contemporary Physics</i> , 2000, 41, 1-14. | 1.8 | 7 |
| 28 | Transition state in atomic physics. <i>Physical Review A</i> , 1999, 60, 3833-3850. | 2.5 | 55 |
| 29 | 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 |
| 30 | 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 |
| 31 | Comment on "Pair Tunneling in Semiconductor Quantum Dots" <i>Physical Review Letters</i> , 1998, 80, 3884-3884. | 7.8 | 4 |
| 32 | Quantum-classical correspondence in the hydrogen atom in weak external fields. <i>Physical Review A</i> , 1998, 58, 3896-3913. | 2.5 | 22 |
| 33 | 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 |
| 34 | Ionization of Rydberg atoms by Coriolis forces. <i>Physical Review A</i> , 1998, 58, 4761-4767. | 2.5 | 12 |
| 35 | 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 |
| 36 | Hydrogen atom in circularly polarized microwaves: Chaotic ionization via core scattering. <i>Physical Review A</i> , 1997, 55, 3730-3745. | 2.5 | 32 |

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| 37 | Role of the atomic Coulomb center in ionization and periodic orbit selection. <i>Physical Review A</i> , 1997, 56, 657-670. | 2.5 | 17 |
| 38 | 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 |
| 39 | 1/rDynamics in External Fields: 2D or 3D?. <i>Physical Review Letters</i> , 1997, 78, 2349-2352. | 7.8 | 21 |
| 40 | Frequency Analysis of 3D Electronic1/rDynamics: Tuning between Order and Chaos. <i>Physical Review Letters</i> , 1997, 78, 1436-1439. | 7.8 | 16 |
| 41 | Coherent states in a Rydberg atom: Quantum mechanics. <i>Physical Review A</i> , 1997, 55, 2222-2231. | 2.5 | 18 |
| 42 | Coherent states in a Rydberg atom: Classical mechanics. <i>Physical Review A</i> , 1997, 55, 2203-2221. | 2.5 | 28 |
| 43 | Comment on "Saddle-point ionization and the Runge-Lenz invariant". <i>Physical Review A</i> , 1997, 55, 1550-1551. | 2.5 | 0 |
| 44 | 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 |
| 45 | A Saturnian atom. <i>Optics Express</i> , 1997, 1, 221. | 3.4 | 17 |
| 46 | Nonstationary, Nondispersive Wave Packets in a Rydberg Atom. <i>Physical Review Letters</i> , 1996, 76, 2874-2877. | 7.8 | 45 |
| 47 | 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 |
| 48 | 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 |
| 49 | Comment on "Signature of classical chaos on quantum tunneling". <i>Physical Review E</i> , 1995, 51, 6313-6315. | 2.1 | 0 |
| 50 | 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 |
| 51 | 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 |
| 52 | Comment on "Circular Rydberg orbits in circularly polarized microwave radiation". <i>Physical Review A</i> , 1995, 51, 4293-4294. | 2.5 | 5 |
| 53 | Comment on "Chaotic Autoionization of Molecular Rydberg States". <i>Physical Review Letters</i> , 1995, 74, 3495-3495. | 7.8 | 6 |
| 54 | Single Atom Quasi-Penning Trap. <i>Physical Review Letters</i> , 1995, 75, 3641-3644. | 7.8 | 26 |

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|----|---|-----|-----------|
| 55 | Ionization Mechanism of Rydberg Atoms in a Circularly Polarized Microwave Field. Physical Review Letters, 1995, 74, 1720-1723. | 7.8 | 60 |
| 56 | Double-well dynamics of two ions in the Paul and Penning traps. Physical Review A, 1994, 49, 1494-1497. | 2.5 | 25 |
| 57 | Semiclassical quantization of doubly excited intrashell resonances of the helium atom. Chemical Physics Letters, 1994, 217, 520-524. | 2.6 | 3 |
| 58 | Core-induced stabilization and autoionization of molecular Rydberg states. Chemical Physics Letters, 1994, 231, 241-245. | 2.6 | 14 |
| 59 | Motional stark effect on Rydberg states in crossed electric and magnetic fields. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 191, 265-274. | 2.1 | 25 |
| 60 | Normalization of Resonant Hamiltonians. NATO ASI Series Series B: Physics, 1994, , 237-244. | 0.2 | 4 |
| 61 | Integrability of the Paul trap and generalized van der Waals Hamiltonians. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 178, 62-72. | 2.1 | 24 |
| 62 | Comment on "Regular and chaotic motions in ion traps: A nonlinear analysis of trap equations". Physical Review A, 1993, 48, 851-853. | 2.5 | 25 |
| 63 | Two-frequency control and suppression of tunneling in the driven double well. Physical Review E, 1993, 47, R2225-R2228. | 2.1 | 34 |
| 64 | Atomic analogs of local and normal modes: The hydrogen atom in a generalized van der Waals potential. Physical Review A, 1993, 47, 3137-3150. | 2.5 | 17 |
| 65 | Semiclassical mechanics of the quadratic Zeeman effect. Physical Review A, 1992, 45, 3093-3103. | 2.5 | 23 |
| 66 | Ionization of Rydberg atoms by circularly and elliptically polarized microwave fields. Physical Review A, 1992, 45, R2678-R2681. | 2.5 | 50 |
| 67 | 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 |
| 68 | Electronic structure of Rydberg atoms in parallel electric and magnetic fields. Physical Review A, 1992, 45, 4738-4751. | 2.5 | 38 |
| 69 | Action-angle variables for the diamagnetic Kepler problem. Physical Review A, 1992, 45, 8277-8279. | 2.5 | 8 |
| 70 | Optical model computations of dissociative chemisorption. The Journal of Physical Chemistry, 1991, 95, 8279-8282. | 2.9 | 2 |
| 71 | Dynamical symmetry of the quadratic Zeeman effect in hydrogen: Semiclassical quantization. Physical Review A, 1991, 43, 1666-1668. | 2.5 | 16 |
| 72 | Determination of tunneling rates in bound systems using the complex coordinate method. Journal of Chemical Physics, 1989, 91, 6246-6253. | 3.0 | 17 |

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|----|---|-----|-----------|
| 73 | 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 |
| 74 | Resonance overlap structure in the microwave ionization of the hydrogen atom. <i>Physical Review A</i> , 1988, 38, 5902-5905. | 2.5 | 5 |
| 75 | 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 |
| 76 | 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 |
| 77 | 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 |
| 78 | 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 |
| 79 | 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 |
| 80 | 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 |
| 81 | Uniform semiclassical self-consistent-field calculations of vibrational resonance energies and widths. <i>Chemical Physics Letters</i> , 1983, 96, 599-603. | 2.6 | 10 |
| 82 | Large-Order Perturbation Theory in the Stark-Zeeman Effect for Parallel Fields. <i>Physical Review Letters</i> , 1983, 51, 2280-2283. | 7.8 | 28 |
| 83 | Saturation behavior of a far-wing satellite. <i>Journal of Chemical Physics</i> , 1983, 79, 1297-1300. | 3.0 | 6 |
| 84 | Highly excited states of HCN: The probable applicability of classical dynamics. <i>Journal of Chemical Physics</i> , 1983, 78, 606-608. | 3.0 | 18 |
| 85 | The Classical Atom: Stabilization of Electronic Trojan Wavepackets. , 0, , 207-212. | | 0 |