Florentino Borondo Rodriguez

List of Publications by Year
in descending order

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161	2,503	218677	289244
papers	citations	26 h-index	40 g-index

161	161	161	833
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Lagrangian descriptors for the Bunimovich stadium billiard. Physical Review E, 2022, 105, 014208.	2.1	4
2	Mean first-passage times for solvated LiCN isomerization at intermediate to high temperatures. Journal of Chemical Physics, 2022, 156, 034103.	3.0	1
3	Adapting reservoir computing to solve the SchrÃ¶dinger equation. Chaos, 2022, 32, 063111.	2.5	0
4	Bohr-Sommerfeld-like quantization in the theory of walking droplets. Physical Review E, 2021, 103, 053110.	2.1	5
5	Correspondence between classical and quantum resonances. Physical Review E, 2021, 103, 062207.	2.1	2
6	Lagrangian descriptors and regular motion. Communications in Nonlinear Science and Numerical Simulation, 2021, 102, 105860.	3.3	10
7	Deep learning methods for the computation of vibrational wavefunctions. Communications in Nonlinear Science and Numerical Simulation, 2021, 103, 105989.	3.3	3
8	Identification of the invariant manifolds of the LiCN molecule using Lagrangian descriptors. Physical Review E, 2021, 104, 044210.	2.1	5
9	Short-periodic-orbit method for excited chaotic eigenfunctions. Physical Review E, 2020, 102, 042210.	2.1	6
10	Influence of external driving on decays in the geometry of the LiCN isomerization. Journal of Chemical Physics, 2020, 153, 084115.	3.0	13
11	Atom scattering off a vibrating surface: An example of chaotic scattering with three degrees of freedom. Communications in Nonlinear Science and Numerical Simulation, 2020, 90, 105282.	3.3	8
12	Using correlation diagrams to study the vibrational spectrum of highly nonlinear floppy molecules: The K-CN case. Physical Review E, 2020, 101, 062215.	2.1	2
13	Lagrangian descriptors for open maps. Physical Review E, 2020, 101, 022208.	2.1	9
14	Identifying reaction pathways in phase space via asymptotic trajectories. Physical Chemistry Chemical Physics, 2020, 22, 10087-10105.	2.8	6
15	Quantization Scheme for the Experiments with â€œWalking Dropletsâ€. Journal of Physical Chemistry A, 2019, 123, 1622-1629.	2.5	1
16	Shannon entropy at avoided crossings in the quantum transition from order to chaos. Physical Review E, 2019, 99, 062209.	2.1	7
17	Finite-barrier corrections for multidimensional barriers in colored noise. Physical Review E, 2019, 99, 052211.	2.1	4
18	Unveiling the chaotic structure in phase space of molecular systems using Lagrangian descriptors. Physical Review E, 2019, 99, 032221.	2.1	25

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19	Role of short periodic orbits in quantum maps with continuous openings. Physical Review E, 2018, 97, 042211.	2.1	6
20	Above Saddle-Point Regions of Order in a Sea of Chaos in the Vibrational Dynamics of KCN. Journal of Physical Chemistry A, 2018, 122, 3433-3441.	2.5	11
21	Dynamical localization in nonideal kicked rotors. Physical Review E, 2018, 98, .	2.1	4
22	Clustering in vibrated monolayers of granular rods. Soft Matter, 2017, 13, 2571-2582.	2.7	24
23	Semiclassical basis sets for the computation of molecular vibrational states. Journal of Chemical Physics, 2017, 146, 014107.	3.0	8
24	Transition state theory for activated systems with driven anharmonic barriers. Journal of Chemical Physics, 2017, 147, 074104.	3.0	19
25	Frequency analysis of the laser driven nonlinear dynamics of HCN. Journal of Chemical Physics, 2016, 145, 244309.	3.0	7
26	Solvated molecular dynamics of LiCN isomerization: All-atom argon solvent versus a generalized Langevin bath. Journal of Chemical Physics, 2016, 144, 024104.	3.0	15
27	Scar Functions, Barriers for Chemical Reactivity, and Vibrational Basis Sets. Journal of Physical Chemistry A, 2016, 120, 4928-4938.	2.5	12
28	Transition state theory for solvated reactions beyond recrossing-free dividing surfaces. Physical Review E, 2016, 93, 062304.	2.1	9
29	Theory of short periodic orbits for partially open quantum maps. Physical Review E, 2016, 94, 012222.	2.1	12
30	Transition state geometry of driven chemical reactions on time-dependent double-well potentials. Physical Chemistry Chemical Physics, 2016, 18, 30270-30281.	2.8	37
31	Using the small alignment index chaos indicator to characterize the vibrational dynamics of a molecular system: LiNC-LiCN. Physical Review E, 2015, 92, 042918.	2.1	5
32	Quantum control of isomerization by robust navigation in the energy spectrum. Journal of Chemical Physics, 2015, 143, 214305.	3.0	6
33	Towards AC-induced optimum control of dynamical localization. Europhysics Letters, 2015, 110, 40007.	2.0	10
34	Maximum population transfer in a periodically driven quantum system. Physical Review A, 2014, 90, .	2.5	11
35	Geometrical analysis of the LiCN vibrational dynamics: A stability geometrical indicator. Physical Review E, 2014, 89, 022901.	2.1	5
36	The role of the CN vibration in the activated dynamics of LiNC$ightleftharpoons$â‡ŒLiCN isomerization in an argon solvent at high temperatures. Journal of Chemical Physics, 2014, 141, 074312.	3.0	14

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37	To Each According to its Degree: The Meritocracy and Topocracy of Embedded Markets. Scientific Reports, 2014, 4, 3784.	3.3	19
38	Classical Invariants in the Quantum Mechanics of Chaotic Systems. Emergence, Complexity and Computation, 2014, , 119-129.	0.3	0
39	Using basis sets of scar functions. Physical Review E, 2013, 87, 042921.	2.1	11
40	Onset of quantum chaos in molecular systems and the zeros of the Husimi function. Physical Review E, 2013, 87, 062901.	2.1	14
41	Classical transients and the support of open quantum maps. Physical Review E, 2013, 87, 012909.	2.1	7
42	Effect of the local morphology in the field emission properties of conducting polymer surfaces. Journal of Physics Condensed Matter, 2013, 25, 285106.	1.8	6
43	Ab initio potential energy surface for the highly nonlinear dynamics of the KCN molecule. Journal of Chemical Physics, 2013, 139, 194304.	3.0	8
44	Analysis of the Full Vibrational Dynamics of the LiNC/LiCN Molecular System. Springer Proceedings in Mathematics and Statistics, 2013, , 77-88.	0.2	4
45	Communication: Transition state theory for dissipative systems without a dividing surface. Journal of Chemical Physics, 2012, 136, 091102.	3.0	14
46	Detailed study of the direct numerical observation of the Kramers turnover in the LiNCâ‡ŒLiCN isomerization rate. Journal of Chemical Physics, 2012, 137, 204301.	3.0	18
47	Computationally efficient method to construct scar functions. Physical Review E, 2012, 85, 026214.	2.1	11
48	Community Structure in a Soil Porous System. Soil Science, 2012, 177, 81-87.	0.9	3
49	Reaction rate calculation with time-dependent invariant manifolds. Journal of Chemical Physics, 2012, 136, 224510.	3.0	18
50	Phase space structure of the hydrogen atom in a circularly polarized microwave field. Physica D: Nonlinear Phenomena, 2012, 241, 333-349.	2.8	14
51	Newtonian versus Special-Relativistic Statistical Predictions for Low-Speed Scattering. PLoS ONE, 2012, 7, e48447.	2.5	2
52	Scarring by short pieces of bifurcated periodic orbits. Europhysics Letters, 2011, 93, 60005.	2.0	0
53	Newtonian and special-relativistic predictions for the trajectories of a low-speed scattering system. Physical Review E, 2011, 83, 036201.	2.1	12
54	Environmental stability of quantum chaotic ratchets. Physical Review E, 2011, 83, 011103.	2.1	9

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55	PoincarÃ©-Birkhoff theorem in quantum mechanics. Physical Review E, 2011, 84, 026206.	2.1	18
56	Diagonal matrix elements in a scar function basis set. Europhysics Letters, 2010, 89, 40013.	2.0	14
57	Zeros of the Husimi function and quantum numbers in the HCP molecule. European Physical Journal D, 2010, 60, 279-286.	1.3	6
58	Control of chemical reactions using external electric fields: The case of the LiNCâ‡ŒLiCN isomerization. Chemical Physics Letters, 2010, 496, 356-361.	2.6	21
59	Effect of irregularities in the work function and field emission properties of metals. Journal of Applied Physics, 2010, 108, 114512.	2.5	1
60	Scars at the edge of the transition from order to chaos in the isomerizing molecular systems LiNC-LiCN and HCN-HNC, and<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>HO</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msu Physical Review E, 2010, 82, 026201.	2.1	19
61	Soil porous system as heterogeneous complex network. Geoderma, 2010, 160, 13-21.	5.1	26
62	Fractal Weyl law behavior in an open Hamiltonian system. Physical Review E, 2009, 80, 055201.	2.1	30
63	A dynamical systems approach to Bohmian trajectories in a 2D harmonic oscillator. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 495103.	2.1	14
64	Superscars in the LiNC â‡ LiCN isomerization reaction. Europhysics Letters, 2009, 88, 40003.	2.0	7
65	Field emission properties of an array of pyramidal structures. Journal Physics D: Applied Physics, 2009, 42, 195303.	2.8	6
66	Contextuality, decoherence and quantum trajectories. Chemical Physics Letters, 2009, 478, 301-306.	2.6	22
67	Chaos in the classical mechanics of bound and quasi-bound HXâ€“4He complexes with X = F, Cl, Br, CN. Physical Chemistry Chemical Physics, 2009, 11, 8203.	2.8	4
68	Controlling dynamical localization by waveform reshaping. Europhysics Letters, 2009, 86, 30004.	2.0	5
69	The scar mechanism revisited. European Physical Journal: Special Topics, 2008, 165, 93-101.	2.6	1
70	Frequency map analysis of the 3D vibrational dynamics of the LiCN/LiNC molecular system. European Physical Journal: Special Topics, 2008, 165, 183-193.	2.6	10
71	Quantum localization through interference on homoclinic and heteroclinic circuits. New Journal of Physics, 2008, 10, 053016.	2.9	13
72	Frequency analysis of the molecular vibrations of HCP. Journal of Chemical Physics, 2008, 129, 164316.	3.0	9

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73	Field emission properties of fractal surfaces. Physical Review B, 2008, 78, .	3.2	10
74	Comment on â€œReduced coherence in double-slit diffraction of neutronsâ€• Physical Review A, 2008, 77, .	2.5	3
75	Space and momentum representation analysis of Hartmanâ€™s effect in wave packet transmission. Physical Review A, 2008, 78, .	2.5	4
76	Solvent-Induced Acceleration of the Rate of Activation of a Molecular Reaction. Physical Review Letters, 2008, 101, 178302.	7.8	40
77	Irregular many-body dynamics of spinor Bose-Einstein condensates in an optical lattice. Physical Review E, 2008, 78, 016204.	2.1	0
78	Multiscaling of porous soils as heterogeneous complex networks. Nonlinear Processes in Geophysics, 2008, 15, 893-902.	1.3	17
79	Vortex dynamics and their interactions in quantum trajectories. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 14353-14368.	2.1	26
80	Quantum and Classical Resonances. AIP Conference Proceedings, 2007, , .	0.4	0
81	Global dynamics of nonrigid triatomic molecular systems of three degrees of freedom. AIP Conference Proceedings, 2007, , .	0.4	1
82	Global dynamical structure in a 3D model for LiCN. AIP Conference Proceedings, 2007, , .	0.4	0
83	A quantum trajectory description of decoherence. European Physical Journal D, 2007, 44, 319-326.	1.3	32
84	Vortex interaction, chaos and quantum probabilities. Europhysics Letters, 2006, 73, 671-676.	2.0	18
85	Scarring by Homoclinic and Heteroclinic Orbits. Physical Review Letters, 2006, 97, 094101.	7.8	31
86	Quantum chaos in floppy molecular systems: The LiCN molecule. , 2006, , 115-128.		4
87	Control Of Isomerization In Ensembles Of Nonrigid Molecules based on Classical and Quantum-mechanical Models, LiCN. , 2006, , .		1
88	The onset of chaos in the vibrational dynamics of LiNCâˆ•LiCN. Journal of Chemical Physics, 2005, 123, 134305.	3.0	6
89	Irreversibility with quantum trajectories. Physical Review E, 2005, 72, 046219.	2.1	0
90	Signatures of Homoclinic Motion in Quantum Chaos. Physical Review Letters, 2005, 94, 054101.	7.8	41

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91	Homoclinic motions in the vibrational spectra of floppy systems: The LiCN molecule. Journal of Chemical Physics, 2005, 122, 111101.	3.0	12
92	Vibrational dynamics of the floppy LiNCâ•LiCN molecular system. Journal of Chemical Physics, 2005, 123, 044301.	3.0	12
93	Loss of coherence in double-slit diffraction experiments. Physical Review A, 2005, 71, .	2.5	30
94	Topology of the distribution of zeros of the Husimi function in the LiNC/LiCN molecular system. Journal of Chemical Physics, 2004, 120, 6516-6523.	3.0	14
95	Role of quantum vortices in atomic scattering from single adsorbates. Physical Review B, 2004, 69, .	3.2	49
96	Classical invariants and the quantization of chaotic systems. Physical Review E, 2004, 70, 035202.	2.1	11
97	Quantum trajectories in atomâ€“surface scattering with single adsorbates: The role of quantum vortices. Journal of Chemical Physics, 2004, 120, 8794-8806.	3.0	52
98	Different time scales in wave function intensity statistics. Physical Review E, 2003, 67, 066212.	2.1	0
99	Dynamics of quantum trajectories in chaotic systems. Europhysics Letters, 2003, 64, 441-447.	2.0	12
100	Dynamically localized wave packets as a tool to study the dynamics of the LiNCâ‡ŒLiCN isomerization reaction. Journal of Chemical Physics, 2002, 116, 10183-10196.	3.0	2
101	Particle diffraction studied using quantum trajectories. Journal of Physics Condensed Matter, 2002, 14, 6109-6145.	1.8	72
102	Frequency map analysis and scars in molecular vibrations. International Journal of Quantum Chemistry, 2002, 86, 167-174.	2.0	4
103	Quantum manifestations of classical trajectories in molecular systems. International Journal of Quantum Chemistry, 2002, 86, 175-181.	2.0	5
104	Scars in Molecular Vibrations and Spectra of LiCN. Foundations of Physics, 2001, 31, 147-163.	1.3	3
105	Algebraic calculation of vibrational energy levels for polyatomic molecules XH3 and XH4: application to ammonia and silane. Chemical Physics Letters, 2001, 344, 421-428.	2.6	8
106	On the classical limit in atom-surface diffraction. Europhysics Letters, 2001, 55, 303-309.	2.0	35
107	Localization properties of groups of eigenstates in chaotic systems. Physical Review E, 2001, 63, 066220.	2.1	22
108	Quantum manifestations of chaos in elastic atom-surface scattering. Physical Review B, 2001, 63, .	3.2	6

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109	Multifractal analysis of tori destruction in a molecular Hamiltonian system. Physical Review E, 2001, 65, 016213.	2.1	25
110	Transition from order to chaos in a floppy molecule: LiNC/LiCN. Chemical Physics Letters, 2000, 317, 451-457.	2.6	10
111	Causal trajectories description of atom diffraction by surfaces. Physical Review B, 2000, 61, 7743-7751.	3.2	93
112	Beyond the first recurrence in scar phenomena. Physical Review E, 2000, 62, R7583-R7586.	2.1	12
113	PERIODIC ORBITS AND CHAOS IN THE CLASSICAL AND QUANTUM MECHANICS OF MOLECULAR SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1999, 09, 2285-2290.	1.7	0
114	Periodic Orbits and Quantum Mechanics of Molecular Hamiltonian Systems. , 1999, , 310-313.		0
115	Probability density distributions in phase space. Computational and Theoretical Chemistry, 1998, 426, 87-93.	1.5	4
116	Molecular spectra, quantum chaos, and scars. European Physical Journal D, 1998, 4, 181-187.	1.3	5
117	Local frequency analysis and the structure of classical phase space of the LiNC/LiCN molecular system. Journal of Chemical Physics, 1998, 108, 63-71.	3.0	34
118	Scar Formation at the Edge of the Chaotic Region. Physical Review Letters, 1998, 80, 944-947.	7.8	47
119	Semiclassical quantization of fragmented tori: Application to saddle-node states of LiNC/LiCN. Journal of Chemical Physics, 1997, 107, 7934-7942.	3.0	24
120	Periodic orbits and the homoclinic tangle in atom-surface chaotic scattering. Physical Review E, 1997, 56, 378-389.	2.1	10
121	Avoided crossings, scars, and transition to chaos. Journal of Chemical Physics, 1997, 107, 2395-2406.	3.0	23
122	Threshold resonances in classical chaotic atomâ€"surface scattering. Surface Science, 1997, 375, L379-L384.	1.9	16
123	Deterministic diffusion in almost integrable systems. Chaos, 1996, 6, 519-527.	2.5	3
124	A periodic orbit analysis of the vibrationally highly excited LiNC/LiCN: A comparison with quantum mechanics. Journal of Chemical Physics, 1996, 104, 2921-2931.	3.0	36
125	Transition from order to chaos in molecular wave functions and spectra. Journal of Chemical Physics, 1996, 104, 6401-6404.	3.0	11
126	Classical singularities in chaotic atom-surface scattering. Physical Review B, 1996, 54, 10397-10400.	3.2	11

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127	Saddleâ€node bifurcations in the LiNC/LiCN molecular system: Classical aspects and quantum manifestations. Journal of Chemical Physics, 1996, 105, 5068-5081.	3.0	34
128	Distribution of zeros of the Husimi function in a realistic Hamiltonian molecular system. Physical Review E, 1996, 54, 2458-2464.	2.1	18
129	Diffraction of atoms from stepped surfaces: A semiclassical chaoticS-matrix study. Physical Review B, 1996, 53, 14117-14126.	3.2	16
130	Quantum manifestations of saddle-node bifurcations. Chemical Physics Letters, 1995, 246, 421-426.	2.6	33
131	Semiclassical rainbow analysis in atom-surface scattering. Surface Science, 1995, 338, L863-L868.	1.9	7
132	Dynamics and Spectroscopy of Highly Excited Molecules. , 1995, , 371-392.		2
133	Periodic-orbit spectroscopy of the hydrogen atom in parallel electric and magnetic fields. Physical Review A, 1994, 49, 2734-2747.	2.5	14
134	Scars in Groups of Eigenstates in a Classically Chaotic System. Physical Review Letters, 1994, 73, 1613-1616.	7.8	85
135	Quantum phase-space densities for a quartic oscillator. International Journal of Quantum Chemistry, 1994, 51, 555-567.	2.0	8
136	The onset of classical chaos in atom-surface scattering. International Journal of Quantum Chemistry, 1994, 52, 515-525.	2.0	9
137	Predissociative lifetimes of the 2 3Îg state of the H2 molecule. Chemical Physics Letters, 1994, 226, 235-240.	2.6	4
138	Classical chaotic elastic atom-surface scattering. Surface Science, 1994, 317, 211-220.	1.9	21
139	Scars in Groups of Eigenfunctions. NATO ASI Series Series B: Physics, 1994, , 287-294.	0.2	0
140	Theoretical Methods for the Analysis of Spectra of Highly Vibrationally Excited Polyatomic Molecules. Laser Chemistry, 1992, 12, 85-102.	0.5	6
141	Dynamical couplings of the predissociative n = 3 triplet gerade complex of H2. Chemical Physics Letters, 1992, 200, 587-591.	2.6	6
142	Saddle point resonances in a bound system with classical chaos. Chemical Physics Letters, 1992, 192, 430-436.	2.6	25
143	Electronic structure of modulation n-doped multiple quantum well. Applied Surface Science, 1990, 41-42, 464-469.	6.1	4
144	Comparison of classical and quantum phase space structure of nonrigid molecules, LiCN. Chemical Physics Letters, 1989, 161, 60-66.	2.6	54

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145	Theoretical study of the rotational predissociation of the c 3Ï€u state of H2. Chemical Physics Letters, 1988, 147, 246-252.	2.6	8
146	Adiabatic energies and radial couplings of the 3Î£+u states of H2. Journal of Chemical Physics, 1987, 86, 4982-4989.	3.0	27
147	Molecular mechanism for hydrogen-hydrogen excitation collisions. Physical Review A, 1987, 36, 3630-3638.	2.5	11
148	Self-consistent calculation of the electronic properties of a selectively dopedAlxGa1â^'xAsâ^'GaAsquantum well under high magnetic fields. Physical Review B, 1987, 36, 5070-5073.	3.2	25
149	Molecular treatment of the ion-pair formation reaction in H(1s)+H(1s) collisions. Physical Review A, 1987, 35, 60-65.	2.5	13
150	Electronic structure of a GaAs quantum well in an electric field. Physical Review B, 1986, 33, 8758-8761.	3.2	49
151	On the use of adiabatic switching to locate quantized, periodic orbits: Application to bound and reactive multidimensional problems. Journal of Chemical Physics, 1986, 84, 1533-1546.	3.0	23
152	The adiabatic switching of semiclassical wave functions. Journal of Chemical Physics, 1986, 85, 2760-2773.	3.0	11
153	A numerical method for the transformation to good action-angle variables in non-separable multidimensional systems. Chemical Physics Letters, 1985, 118, 409-413.	2.6	18
154	The semiclassical quantization of nonseparable systems using the method of adiabatic switching. Journal of Chemical Physics, 1985, 82, 4611-4632.	3.0	158
155	Classical, Semiclassical, and Quantum Dynamics of Long-Lived Highly Excited Vibrational States of Triatoms. ACS Symposium Series, 1984, , 323-336.	0.5	5
156	Asymmetry effect in H+ + Hâ^' neutralization. Application to the n = 3 pseudocrossing. Chemical Physics Letters, 1983, 100, 63-66.	2.6	11
157	Charge transfer in H+ + Hâ^' collisions. Chemical Physics, 1983, 81, 303-314.	1.9	41
158	Predissociation of the D1Îustate of H2near threshold. Journal of Physics B: Atomic and Molecular Physics, 1982, 15, 899-908.	1.6	20
159	Nonadiabatic ionicâ€“covalent transitions. Exponentialâ€“linear model for the process H++Hâ^'â†'H(2s,2p)+H(1s). Journal of Chemical Physics, 1981, 74, 6126-6132.	3.0	31
160	Asymmetry Effect in the Neutralization ReactionH++Hâ^'. Physical Review Letters, 1981, 46, 420-423.	7.8	35
161	Control of isomerization in classical ensembles of nonrigid molecular systems, LiCN. , 0, , .		2