Craig C Martens

List of Publications by Year in Descending Order

82 papers	2,451 citations	26 h-index	47 g-index
82 ext. papers	2,567 ext. citations	3.8 avg, IF	5.2 L-index

#	Paper	IF	Citations
82	Photofragmentation dynamics study of ArBr$$_2$$ $$(v=16,ldots ,25)$$ using two theoretical methods: trajectory surface hopping and quasiclassical trajectories. *European Physical Journal D*, **2022**, 76,	1.3	
81	Study of the Vibrational Predissociation of the NeBr2 Complex by Computational Simulation Using the Trajectory Surface Hopping Method. *Mathematics*, **2020**, 8, 2029	2.3	0
80	Tribute to William P. Reinhardt. *Journal of Physical Chemistry A*, **2019**, 123, 3615-3616	2.8	
79	Emerging opportunities and future directions: general discussion. *Faraday Discussions*, **2019**, 221, 564-583	3.6	5
78	Zero-point energy and tunnelling: general discussion. *Faraday Discussions*, **2019**, 221, 478-500	3.6	4
77	Quantum coherence in complex environments: general discussion. *Faraday Discussions*, **2019**, 221, 168-201	3.6	3
76	Surface Hopping without Momentum Jumps: A Quantum-Trajectory-Based Approach to Nonadiabatic Dynamics. *Journal of Physical Chemistry A*, **2019**, 123, 1110-1128	2.8	20
75	Classical and nonclassical effects in surface hopping methodology for simulating coupled electronic-nuclear dynamics. *Faraday Discussions*, **2019**, 221, 449-477	3.6	6
74	Information Dynamics of a Nonlinear Stochastic Nanopore System. *Entropy*, **2018**, 20,	2.8	1
73	Entanglement dynamics with a trajectory-based formulation. *Physical Review A*, **2017**, 96,	2.6	7
72	Surface Hopping by Consensus. *Journal of Physical Chemistry Letters*, **2016**, 7, 2610-5	6.4	47
71	Nonadiabatic dynamics in the semiclassical Liouville representation: Locality, transformation theory, and the energy budget. *Chemical Physics*, **2016**, 481, 60-68	2.3	7
70	Nanopore Current Oscillations: Nonlinear Dynamics on the Nanoscale. *Journal of Physical Chemistry Letters*, **2015**, 6, 1800-6	6.4	15
69	Communication: Fully coherent quantum state hopping. *Journal of Chemical Physics*, **2015**, 143, 141101	3.9	18
68	Toward a quantum trajectory-based rate theory. *Theoretical Chemistry Accounts*, **2014**, 133, 1	1.9	
67	Coherent quantum processes in thermal and nonequilibrium environments. *International Journal of Quantum Chemistry*, **2013**, 113, 316-325	2.1	1
66	H2O photodissociation in the first absorption band: entangled trajectory molecular dynamics method. *Journal of Chemical Physics*, **2013**, 138, 024103	3.9	10

65	Quantum dephasing of a two-state system by a nonequilibrium harmonic oscillator. *Journal of Chemical Physics*, **2013**, 139, 024109	3.9	10
64	Theory and simulation of the loss of coherence in thermal and nonequilibrium environments. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2012**, 45, 154008	1.3	7
63	Entangled trajectory molecular dynamics in multidimensional systems: two-dimensional quantum tunneling through the Eckart barrier. *Journal of Chemical Physics*, **2012**, 137, 034113	3.9	18
62	Simulation of vibrational dephasing in liquid water using the semiclassical Liouville method. *Chemical Physics Letters*, **2011**, 510, 208-211	2.5	7
61	Molecular Dynamics Simulation of Salt Rejection in Model Surface-Modified Nanopores. *Journal of Physical Chemistry Letters*, **2010**, 1, 528-535	6.4	81
60	Precipitation-Induced Voltage-Dependent Ion Current Fluctuations in Conical Nanopores. *Journal of Physical Chemistry C*, **2010**, 114, 8126-8134	3.8	31
59	Communication: Decoherence in a nonequilibrium environment: an analytically solvable model. *Journal of Chemical Physics*, **2010**, 133, 241101	3.9	18
58	Solving evolution equations using interacting trajectory ensembles. *Chemical Physics*, **2010**, 370, 20-28	2.3	10
57	Asymmetric properties of ion current 1/f noise in conically shaped nanopores. *Chemical Physics*, **2010**, 375, 529-535	2.3	20
56	Nonequilibrium 1/f noise in rectifying nanopores. *Physical Review Letters*, **2009**, 103, 248104	7.4	51
55	Pressure-induced water flow through model nanopores. *Physical Chemistry Chemical Physics*, **2009**, 11, 528-33	3.6	36
54	Effect of boundary conditions on the structure and dynamics of nanoscale confined water. *Journal of Physical Chemistry A*, **2009**, 113, 2046-52	2.8	6
53	Quantum tunneling dynamics using entangled trajectories: general potentials. *Physical Chemistry Chemical Physics*, **2009**, 11, 1588-94	3.6	21
52	Nanoprecipitation-assisted ion current oscillations. *Nature Nanotechnology*, **2008**, 3, 51-7	28.7	140
51	Independent trajectory implementation of the semiclassical Liouville method: application to multidimensional reaction dynamics. *Journal of Physical Chemistry A*, **2007**, 111, 10256-62	2.8	9
50	Simulation of vibrational dephasing of I(2) in solid Kr using the semiclassical Liouville method. *Journal of Chemical Physics*, **2006**, 124, 64506	3.9	19
49	Entangled trajectory dynamics in the Husimi representation. *Journal of Chemical Physics*, **2006**, 125, 154119	3.9	22
48	Environmental decoherence of many-body quantum systems: Semiclassical theory and simulation. *Chemical Physics*, **2006**, 322, 108-117	2.3	13

47	Quantum vibrational state-dependent potentials for classical many-body simulations. *Journal of Chemical Physics*, **2005**, 122, 174107	3.9	14
46	Simulation of environmental effects on coherent quantum dynamics in many-body systems. *Journal of Chemical Physics*, **2004**, 120, 6863-73	3.9	26
45	Semiclassical Liouville method for the simulation of electronic transitions: single ensemble formulation. *Journal of Chemical Physics*, **2004**, 121, 11572-80	3.9	24
44	Simulation of quantum processes using entangled trajectory molecular dynamics. *Journal of Chemical Physics*, **2003**, 119, 5010-5020	3.9	69
43	Ultrafast many-body energy transfer in the frequency domain. *Chemical Physics*, **2002**, 280, 257-265	2.3	2
42	Classical trajectory-based approaches to solving the quantum Liouville equation. *International Journal of Quantum Chemistry*, **2002**, 90, 1348-1360	2.1	31
41	Solution of phase space diffusion equations using interacting trajectory ensembles. *Journal of Chemical Physics*, **2002**, 116, 10598-10605	3.9	39
40	Qualitative dynamics of generalized Langevin equations and the theory of chemical reaction rates. *Journal of Chemical Physics*, **2002**, 116, 2516-2528	3.9	25
39	Quantum tunneling using entangled classical trajectories. *Physical Review Letters*, **2001**, 87, 223202	7.4	145
38	Simulation of nonadiabatic wave packet interferometry using classical trajectories. *Journal of Chemical Physics*, **2000**, 112, 7345-7354	3.9	55
37	Semiclassical multistate Liouville dynamics in the adiabatic representation. *Journal of Chemical Physics*, **2000**, 112, 3980-3989	3.9	85
36	Nanoscale shock wave spectroscopy: A direct view of coherent ultrafast bath dynamics. *Journal of Chemical Physics*, **1999**, 111, 4343-4350	3.9	6
35	Simulation of Coherent Nonadiabatic Dynamics Using Classical Trajectories. *Journal of Physical Chemistry A*, **1998**, 102, 4291-4300	2.8	143
34	Semiclassical-limit molecular dynamics on multiple electronic surfaces. *Journal of Chemical Physics*, **1997**, 106, 4918-4930	3.9	215
33	Coherent Ultrafast Vibrational Excitation of Molecules in Localized Shock Wave Fronts. *Journal of Physical Chemistry A*, **1997**, 101, 4613-4620	2.8	8
32	One-atom cage effect in collinear I2 Ar(B) complexes: a quasiclassical trajectory investigation. *Chemical Physics Letters*, **1997**, 272, 103-110	2.5	12
31	An effective Hamiltonian-based method for mixed quantum-classical dynamics on coupled electronic surfaces. *Journal of Chemical Physics*, **1996**, 104, 3684-3691	3.9	13
30	Simulation of ultrafast dynamics and pump□probe spectroscopy using classical trajectories. *Journal of Chemical Physics*, **1996**, 104, 6919-6929	3.9	85

29	One-atom cage effect in collinear I2(B)Ar complexes: A time-dependent wave packet study. *Journal of Chemical Physics*, **1996**, 105, 9072-9082	3.9	47
28	Nanoscale shock wave generation by photodissociation of impurities in solids: A molecular dynamics study. *Journal of Chemical Physics*, **1995**, 102, 1905-1916	3.9	29
27	Classical and Quantum Molecular Dynamics Simulation on Distributed-Memory Massively Parallel Computers. *ACS Symposium Series*, **1995**, 186-201	0.4	
26	Analysis of dissociation times and fragmentation patterns in the decomposition of highly excited clusters. *Zeitschrift Fur Physik D-Atoms Molecules and Clusters*, **1994**, 29, 139-145		1
25	Coherent photodissociation-recombination dynamics of I2 isolated in matrix Ar and Kr **1994**,		6
24	Classical trajectory simulation of the cluster–atom association reaction IArn+I-I2+nAr. I. Capture of iodine by the I(Ar)12 cluster. *Journal of Chemical Physics*, **1993**, 98, 8551-8559	3.9	11
23	Classical trajectory simulation of the cluster–atom association reaction IArn+I-I2+nAr. II. Diffusion of captured iodine and evaporative cooling of I2. *Journal of Chemical Physics*, **1993**, 99, 9532-9546	3.9	7
22	Atom–cluster interaction potentials and thermal collision rates. *Journal of Chemical Physics*, **1993**, 99, 2654-2660	3.9	9
21	Nonlinear resonance and correlated binary collisions in the vibrational predissociation dynamics of I2(B,v)Ar13 clusters. *Journal of Chemical Physics*, **1993**, 98, 8514-8524	3.9	17
20	Nonlinear dynamics of large-amplitude molecular excitation by shaped optical pulse sequences. *Journal of Chemical Physics*, **1993**, 99, 7440-7448	3.9	4
19	Wavelet analysis of condensed phase molecular dynamics. *Chemical Physics Letters*, **1993**, 214, 362-366	2.5	9
18	Nonstationary time series analysis of intramolecular energy transfer. *Chemical Physics Letters*, **1993**, 214, 159-165	2.5	4
17	Nonexponential behavior in the vibrational predissociation dynamics of I2(B,v)Ar13. *Journal of Chemical Physics*, **1992**, 97, 7234-7241	3.9	26
16	The role of microscopic solvation in the association reaction IAr12+I. *Journal of Chemical Physics*, **1992**, 97, 8805-8808	3.9	14
15	Coriolis interaction in polyatomic molecules: A quantum qualitative approach to a two mode model system. *Journal of Chemical Physics*, **1992**, 96, 1870-1885	3.9	12
14	A simple SU(2)-based approach to Coriolis-adapted vibrational states. *Journal of Chemical Physics*, **1992**, 96, 8971-8979	3.9	3
13	Nonstationary time-series analysis of many-body dynamics. *Physical Review A*, **1992**, 45, 6914-6917	2.6	10
12	Quantum qualitative dynamics. *Journal of Statistical Physics*, **1992**, 68, 207-237	1.5	14

11	Coriolis interaction in polyatomic molecules: A classical coupled spin representation. *Journal of Chemical Physics*, **1991**, 94, 3594-3606	3.9	11
10	Nonlinear dynamics of methyl rotation and intramolecular energy diffusion in p-fluorotoluene. *Journal of Chemical Physics*, **1990**, 93, 5621-5633	3.9	49
9	Classical, semiclassical, and quantum mechanics of a globally chaotic system: Integrability in the adiabatic approximation. *Journal of Chemical Physics*, **1989**, 90, 2328-2337	3.9	52
8	Vibration-Rotation interaction in the rigid bender: A quantum mechanical phase space view. *Journal of Chemical Physics*, **1989**, 90, 7064-7070	3.9	12
7	Classical-quantum correspondence in the presence of global chaos. *Physical Review Letters*, **1988**, 61, 2733-2736	7.4	73
6	Dynamical symmetry breaking and quantum nonintegrability. *Physical Review Letters*, **1988**, 61, 2167-2170	7.4	35
5	Classical, quantum mechanical, and semiclassical representations of resonant dynamics: A unified treatment. *Journal of Chemical Physics*, **1987**, 87, 284-302	3.9	41
4	Classical and semiclassical mechanics of strongly resonant systems: A Fourier transform approach. *Journal of Chemical Physics*, **1987**, 86, 279-307	3.9	95
3	Local frequency analysis of chaotic motion in multidimensional systems: energy transport and bottlenecks in planar OCS. *Chemical Physics Letters*, **1987**, 142, 519-528	2.5	94
2	EBK quantization of nonseparable systems: A Fourier transform method. *Journal of Chemical Physics*, **1985**, 83, 2990-3001	3.9	100
1	A simple method for determining the number of isolating integrals in multidimensional systems: Computation of the pointwise dimension. *Chemical Physics Letters*, **1984**, 108, 573-579	2.5	6