

Marco Pettini

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98
papers

3,326
citations

32
h-index

55
g-index

102
ext. papers

3,607
ext. citations

3.2
avg, IF

5.1
L-index

#	Paper	IF	Citations
98	Suppression of chaos by resonant parametric perturbations. <i>Physical Review A</i> , 1990 , 41, 726-733	2.6	343
97	Geometric approach to Hamiltonian dynamics and statistical mechanics. <i>Physics Reports</i> , 2000 , 337, 237-347	2.6	185
96	Equipartition threshold in nonlinear large Hamiltonian systems: The Fermi-Pasta-Ulam model. <i>Physical Review A</i> , 1985 , 31, 1039-1045	2.6	164
95	Relaxation properties and ergodicity breaking in nonlinear Hamiltonian dynamics. <i>Physical Review A</i> , 1990 , 41, 768-783	2.6	161
94	Geometry and Topology in Hamiltonian Dynamics and Statistical Mechanics. <i>Interdisciplinary Applied Mathematics</i> , 2007 ,	0.7	148
93	Experimental evidence of suppression of chaos by resonant parametric perturbations. <i>Physical Review A</i> , 1991 , 43, 6483-6487	2.6	110
92	Riemannian theory of Hamiltonian chaos and Lyapunov exponents. <i>Physical Review E</i> , 1996 , 54, 5969-5984	2.4	106
91	Geometrical hints for a nonperturbative approach to Hamiltonian dynamics. <i>Physical Review E</i> , 1993 , 47, 828-850	2.4	106
90	Geometry of Dynamics, Lyapunov Exponents, and Phase Transitions. <i>Physical Review Letters</i> , 1997 , 79, 4361-4364	7.4	103
89	Gaussian model for chaotic instability of Hamiltonian flows. <i>Physical Review Letters</i> , 1995 , 74, 375-378	7.4	93
88	Strong stochasticity threshold in nonlinear large Hamiltonian systems: Effect on mixing times. <i>Physical Review A</i> , 1991 , 44, 975-987	2.6	90
87	Theorem on the origin of phase transitions. <i>Physical Review Letters</i> , 2004 , 92, 060601	7.4	74
86	The Fermi-Pasta-Ulam problem revisited: Stochasticity thresholds in nonlinear Hamiltonian systems. <i>Physical Review E</i> , 1997 , 55, 6566-6574	2.4	70
85	Chaotic behavior in nonlinear Hamiltonian systems and equilibrium statistical mechanics. <i>Journal of Statistical Physics</i> , 1987 , 48, 539-559	1.5	68
84	Relaxation to different stationary states in the Fermi-Pasta-Ulam model. <i>Physical Review A</i> , 1983 , 28, 3544-3552	2.6	67
83	Topological signature of first-order phase transitions in a mean-field model. <i>Europhysics Letters</i> , 2003 , 62, 775-781	1.6	59
82	Analytic computation of the strong stochasticity threshold in Hamiltonian dynamics using Riemannian geometry. <i>Physical Review E</i> , 1993 , 48, 4320-4332	2.4	56

81	Chaotic diffusion across a magnetic field in a model of electrostatic turbulent plasma. <i>Physical Review A</i> , 1988 , 38, 344-363	2.6	56
80	Further results on the equipartition threshold in large nonlinear Hamiltonian systems. <i>Physical Review A</i> , 1985 , 31, 2740-2742	2.6	56
79	Phase Transitions and Topology Changes in Configuration Space. <i>Journal of Statistical Physics</i> , 2003 , 111, 1091-1123	1.5	55
78	Geometric description of chaos in two-degrees-of-freedom Hamiltonian systems. <i>Physical Review E</i> , 1996 , 53, 179-188	2.4	53
77	Regular and chaotic quantum motions. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1996 , 212, 29-38	2.3	49
76	Topology and phase transitions: paradigmatic evidence. <i>Physical Review Letters</i> , 2000 , 84, 2774-7	7.4	44
75	Geometry of dynamics and phase transitions in classical lattice \mathbb{Z}^d theories. <i>Physical Review E</i> , 1998 , 57, 3886-3899	2.4	42
74	Photoionization spectrum of the P3 ground state of neutral carbon. <i>Physical Review A</i> , 1981 , 23, 1223-1228		39
73	Geometric description of chaos in self-gravitating systems. <i>Physical Review E</i> , 1995 , 51, 53-64	2.4	38
72	Persistent homology analysis of phase transitions. <i>Physical Review E</i> , 2016 , 93, 052138	2.4	36
71	Weak and strong chaos in Fermi-Pasta-Ulam models and beyond. <i>Chaos</i> , 2005 , 15, 15106	3.3	36
70	Topological Origin of the Phase Transition in a Mean-Field Model. <i>Physical Review Letters</i> , 1999 , 82, 4160-4163	4.1	35
69	Possible failure of Arnold diffusion in nonlinear hamiltonian systems with more than two degrees of freedom. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1984 , 106, 207-211	2.3	34
68	Hamiltonian dynamics of the two-dimensional lattice model. <i>Journal of Physics A</i> , 1998 , 31, 3357-3381		33
67	Topological aspects of geometrical signatures of phase transitions. <i>Physical Review E</i> , 1999 , 60, R5009-12	2.4	33
66	Control of Hamiltonian chaos as a possible tool to control anomalous transport in fusion plasmas. <i>Physical Review E</i> , 2004 , 69, 056213	2.4	31
65	Possible role of electrodynamic interactions in long-distance biomolecular recognition. <i>Physical Review E</i> , 2015 , 91, 052710	2.4	30
64	Topology and phase transitions I. Preliminary results. <i>Nuclear Physics B</i> , 2007 , 782, 189-218	2.8	29

63	Topology and phase transitions II. Theorem on a necessary relation. <i>Nuclear Physics B</i> , 2007 , 782, 219-240.	0.8	29
62	Exact result on topology and phase transitions at any finite N. <i>Physical Review E</i> , 2002 , 65, 036112	2.4	26
61	On the Riemannian description of chaotic instability in Hamiltonian dynamics. <i>Chaos</i> , 1995 , 5, 646-652	3.3	26
60	Excitation of the inner 4d shell of neutral iodine. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1981 , 82, 168-170	2.3	26
59	Topology and phase transitions: from an exactly solvable model to a relation between topology and thermodynamics. <i>Physical Review E</i> , 2005 , 71, 036152	2.4	23
58	Controlling chaotic transport in a Hamiltonian model of interest to magnetized plasmas. <i>Journal of Physics A</i> , 2004 , 37, 3589-3597		22
57	Hamiltonian dynamics and geometry of phase transitions in classical XY models. <i>Physical Review E</i> , 2000 , 61, 5171-90	2.4	22
56	Topology driven modeling: the IS metaphor. <i>Natural Computing</i> , 2015 , 14, 421-430	1.3	20
55	Resonant long-range interactions between polar macromolecules. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2013 , 377, 587-591	2.3	18
54	Inner shell transitions of Br I in the EUV. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1981 , 85, 331-333	2.3	18
53	Dynamics of Oscillator Chains 2007 , 21-121		18
52	Characterisation of the Idiotypic Immune Network Through Persistent Entropy. <i>Springer Proceedings in Complexity</i> , 2016 , 117-128	0.3	18
51	Experimental assessment of the contribution of electrodynamic interactions to long-distance recruitment of biomolecular partners: Theoretical basis. <i>Physical Review E</i> , 2012 , 85, 041904	2.4	17
50	Beam-plasma instability and fast particles: the Lynden-Bell approach. <i>Plasma Physics and Controlled Fusion</i> , 2014 , 56, 035013	2	16
49	Quantifying networks complexity from information geometry viewpoint. <i>Journal of Mathematical Physics</i> , 2014 , 55, 043505	1.2	16
48	Absorption Spectrum of Au I in the Vacuum Ultraviolet. <i>Physica Scripta</i> , 1979 , 20, 156-162	2.6	16
47	Out-of-Equilibrium Collective Oscillation as Phonon Condensation in a Model Protein. <i>Physical Review X</i> , 2018 , 8,	9.1	15
46	Lyapunov exponents from geodesic spread in configuration space. <i>Physical Review E</i> , 1997 , 56, 4872-4875.	5.4	14

45	Experimental detection of long-distance interactions between biomolecules through their diffusion behavior: numerical study. <i>Physical Review E</i> , 2014 , 90, 022703	2.4	13
44	Parametric Resonant Control of Chaos. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 1998 , 08, 1675-1684	2	13
43	Absorption Spectrum of Ag I in the Vacuum Ultraviolet. <i>Physica Scripta</i> , 1979 , 19, 283-288	2.6	13
42	Reply to "Comment on 'Suppression of chaos by resonant parametric perturbations'". <i>Physical Review E</i> , 1993 , 47, 4630-4631	2.4	11
41	A geometric entropy detecting the Erdős-Rényi phase transition. <i>Europhysics Letters</i> , 2015 , 111, 20001	1.6	10
40	Topological origin of phase transitions in the absence of critical points of the energy landscape. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2018 , 2018, 093204	1.9	10
39	Detection of long-range electrostatic interactions between charged molecules by means of fluorescence correlation spectroscopy. <i>Physical Review E</i> , 2017 , 96, 022403	2.4	9
38	Strong Chaos in N-body problem and Microcanonical Thermodynamics of Collisionless Self Gravitating Systems. <i>Astrophysics and Space Science</i> , 2003 , 283, 347-368	1.6	9
37	On the clustering phase transition in self-gravitating N-body systems. <i>Monthly Notices of the Royal Astronomical Society</i> , 2001 , 328, 339-352	4.3	9
36	Riemannian-geometric entropy for measuring network complexity. <i>Physical Review E</i> , 2016 , 93, 062317	2.4	8
35	Riemannian geometry of Hamiltonian chaos: hints for a general theory. <i>Physical Review E</i> , 2008 , 78, 046205	2.5	8
34	Control of test particle transport in a turbulent electrostatic model of the Scrape-Off-Layer. <i>Journal of Nuclear Materials</i> , 2007 , 363-365, 550-554	3.3	7
33	Hamiltonian dynamics of homopolymer chain models. <i>Physical Review E</i> , 2006 , 74, 041805	2.4	7
32	A Geometric Interpretation of Integrable Motions. <i>Celestial Mechanics and Dynamical Astronomy</i> , 2002 , 84, 263-281	1.4	7
31	Phase space geometry and stochasticity thresholds in hamiltonian dynamics. <i>Physical Review E</i> , 2000 , 62, 6078-81	2.4	7
30	Relaxation Times in an Anharmonic Crystal with Diluted Impurities. <i>Europhysics Letters</i> , 1995 , 32, 549-554	1.6	7
29	TURBULENT DIFFUSION OF TEST PARTICLES IN STRONGLY MAGNETIZED PLASMAS. <i>International Journal of Modern Physics B</i> , 1991 , 05, 1243-1262	1.1	7
28	The ultraviolet problem and analytical properties of classical field theories. <i>Journal of Physics A</i> , 1987 , 20, 577-586		7

27	On the origin of phase transitions in the absence of symmetry-breaking. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2019 , 516, 376-392	3.3	7
26	Control Of Chaos In Hamiltonian Systems. <i>Celestial Mechanics and Dynamical Astronomy</i> , 2004 , 90, 3-12	1.4	6
25	Geometry of Chaos in Models of Stellar Dynamics. <i>Celestial Mechanics and Dynamical Astronomy</i> , 2002 , 83, 171-190	1.4	6
24	Tailoring phase space: A way to control Hamiltonian transport. <i>Europhysics Letters</i> , 2005 , 69, 879-885	1.6	6
23	Dynamical and statistical properties of Hamiltonian systems with many degrees of freedom. <i>Rivista Del Nuovo Cimento</i> , 1999 , 22, 1-74	3.5	6
22	Compressible MHD Turbulence: An Efficient Mechanism to Heat Stellar Coronae 1985 , 305-316		6
21	Controlling Chaos through parametric excitations. <i>Lecture Notes in Physics</i> , 1990 , 242-250	0.8	5
20	Controlling chaos in area-preserving maps. <i>Physica D: Nonlinear Phenomena</i> , 2005 , 208, 131-146	3.3	4
19	Random walk of passive tracers among randomly moving obstacles. <i>Theoretical Biology and Medical Modelling</i> , 2016 , 13, 13	2.3	3
18	Short-time asymptotics in classical nonlinear wave equations. <i>Societa Italiana Di Fisica Nuovo Cimento B-General Physics, Relativity Astronomy and Mathematical Physics and Methods</i> , 1985 , 89, 120-130		3
17	Experimental evidence for long-distance electrodynamic intermolecular forces.. <i>Science Advances</i> , 2022 , 8, eabl5855	14.3	3
16	Geometric approach to chaos in the classical dynamics of Abelian lattice gauge theory. <i>Journal of Physics A</i> , 1999 , 32, 3055-3067		2
15	Connectance and equipartition thresholds in hamiltonian systems. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1985 , 109, 451-453	2.3	2
14	Energy transfer to the phonons of a macromolecule through light pumping. <i>Scientific Reports</i> , 2021 , 11, 6591	4.9	2
13	Collective behavior of oscillating electric dipoles. <i>Scientific Reports</i> , 2018 , 8, 15748	4.9	2
12	Catching homologies by geometric entropy. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2018 , 491, 666-677	3.3	1
11	Control of the chaotic velocity dispersion of a cold electron beam interacting with electrostatic waves. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2006 , 561, 244-248	1.2	1
10	Analytic lyapunov exponents in a classical nonlinear field equation. <i>Physical Review E</i> , 2000 , 61, R3299-3024		1

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| 9 | Recent developments in the dynamics of nonlinear Hamiltonian systems with many degrees of freedom 1994 , 64-84 | | 1 |
| 8 | Stochastic magnetic field generation in MHD resistive instabilities: validity limits of linear stability analysis. <i>Journal of Plasma Physics</i> , 1988 , 40, 419-440 | 2.7 | 1 |
| 7 | Extended analysis of the vuv spectrum of neutral carbon. <i>Physica B: Physics of Condensed Matter & C: Atomic, Molecular and Plasma Physics, Optics</i> , 1981 , 111, 379-385 | | 1 |
| 6 | Non-collisional cross-field diffusion of relativistic electrons. <i>Astronomy and Astrophysics</i> , 2003 , 402, 819-826 | | 1 |
| 5 | Coherent Riemannian-geometric description of Hamiltonian order and chaos with Jacobi metric. <i>Chaos</i> , 2019 , 29, 123134 | 3.3 | 1 |
| 4 | Hamiltonian chaos and differential geometry of configuration space time. <i>Physica D: Nonlinear Phenomena</i> , 2021 , 422, 132909 | 3.3 | 1 |
| 3 | Agent-based models for detecting the driving forces of biomolecular interactions.. <i>Scientific Reports</i> , 2022 , 12, 1878 | 4.9 | 0 |
| 2 | Geometrical and topological study of the Kosterlitz-Thouless phase transition in the XY model in two dimensions. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2021 , 2021, 023206 | 1.9 | 0 |
| 1 | Geometry of Chaos in Models of Stellar Dynamics 2002 , 171-190 | | |