

Michel Peyrard

List of Publications by Year in descending order

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96
papers

5,323
citations

109137

35
h-index

79541

73
g-index

96
all docs

96
docs citations

96
times ranked

1964
citing authors

#	ARTICLE	IF	CITATIONS
1	Understanding temperature-modulated calorimetry through studies of a model system. Physical Review E, 2022, 105, 034144.	0.8	0
2	Melting transition of oriented Liâ€DNA fibers submerged in ethanol solutions. Biopolymers, 2021, 112, e23422.	1.2	0
3	How is information transmitted in a nerve?. Journal of Biological Physics, 2020, 46, 327-341.	0.7	7
4	Memory effects in glasses: Insights into the thermodynamics of out-of-equilibrium systems revealed by a simple model of the Kovacs effect. Physical Review E, 2020, 102, 052122.	0.8	8
5	Onset of Sliding of Elastomer Multicontacts: Failure of a Model of Independent Asperities to Match Experiments. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	9
6	Comment on "Dynamically induced heat rectification in quantum systems" Physical Review E, 2020, 101, 016101.	0.8	1
7	Melting Transition of Oriented DNA Fibers Submerged in Poly(ethylene glycol) Solutions Studied by Neutron Scattering and Calorimetry. Journal of Physical Chemistry B, 2018, 122, 2504-2515.	1.2	3
8	Seismic quiescence in a frictional earthquake model. Geophysical Journal International, 2018, 213, 676-683.	1.0	5
9	Kinky DNA in solution: Small-angle-scattering study of a nucleosome positioning sequence. Physical Review E, 2018, 98, .	0.8	7
10	From Thermal Rectifiers to Thermoelectric Devices. Lecture Notes in Physics, 2016, , 365-407.	0.3	12
11	Melting of Highly Oriented Fiber DNA Subjected to Osmotic Pressure. Journal of Physical Chemistry B, 2015, 119, 4441-4449.	1.2	3
12	Small-angle scattering as a tool to study the thermal denaturation of DNA. Europhysics Letters, 2014, 108, 18002.	0.7	1
13	Ionic mobility in DNA films studied by dielectric spectroscopy. European Physical Journal E, 2014, 37, 39.	0.7	1
14	Characterization of the low-temperature properties of a simplified protein model. Physical Review E, 2014, 89, 012705.	0.8	1
15	Can we model DNA at the mesoscale?. Physics of Life Reviews, 2014, 11, 173-175.	1.5	5
16	Temperature Dependence of the DNA Double Helix at the Nanoscale: Structure, Elasticity, and Fluctuations. Biophysical Journal, 2013, 105, 1904-1914.	0.2	34
17	Purification of A-Form DNA Fiber Samples by the Removal of B-Form DNA Residues. Journal of Physical Chemistry B, 2013, 117, 1849-1856.	1.2	7
18	Role of aging in a minimal model of earthquakes. Physical Review E, 2013, 87, .	0.8	11

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19	Calorimetric study of melted DNA glass. , 2013, , .		0
20	The dynamics of the DNA denaturation transition. Europhysics Letters, 2012, 98, 48004.	0.7	12
21	Base Pair Openings and Temperature Dependence of DNA Flexibility. Physical Review Letters, 2012, 108, 078104.	2.9	28
22	Intrinsic localized modes in nonlinear models inspired by DNA. Nonlinear Theory and Its Applications IEICE, 2012, 3, 27-51.	0.4	4
23	Collective Effects at Frictional Interfaces. Tribology Letters, 2012, 48, 11-25.	1.2	16
24	Glassy Behavior of Denatured DNA Films Studied by Differential Scanning Calorimetry. Journal of Physical Chemistry B, 2012, 116, 4394-4402.	1.2	9
25	Nonlinear lattice models for biopolymers: Dynamical coupling to a ionic cloud and application to actin filaments. Discrete and Continuous Dynamical Systems - Series S, 2011, 4, 1147-1166.	0.6	0
26	Thermal Denaturation of DNA Studied with Neutron Scattering. Physical Review Letters, 2011, 106, 048101.	2.9	38
27	Structural correlations and melting of B-DNA fibers. Physical Review E, 2011, 83, 061923.	0.8	17
28	Dependence of kinetic friction on velocity: Master equation approach. Physical Review E, 2011, 83, 046129.	0.8	29
29	Guanine radical chemistry reveals the effect of thermal fluctuations in gene promoter regions. Nucleic Acids Research, 2011, 39, 5276-5283.	6.5	18
30	Critical examination of the inherent-structure-landscape analysis of two-state folding proteins. Physical Review E, 2009, 80, 061907.	0.8	1
31	On four-point correlation functions in simple polymer models. Journal of Statistical Mechanics: Theory and Experiment, 2009, 2009, P04011.	0.9	1
32	Nonlinear Analysis of the Dynamics of DNA Breathing. Journal of Biological Physics, 2009, 35, 73-89.	0.7	61
33	Modelling DNA at the mesoscale: a challenge for nonlinear science?. Nonlinearity, 2008, 21, T91-T100.	0.6	55
34	Modeling DNA beacons at the mesoscopic scale. European Physical Journal E, 2007, 23, 397-411.	0.7	9
35	Melting the double helix. Nature Physics, 2006, 2, 13-14.	6.5	24
36	The inherent structure landscape of a protein. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 5279-5284.	3.3	40

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37	van ErpetÅal.Reply:. Physical Review Letters, 2006, 97, .	2.9	8
38	van ErpetÅal.Reply:. Physical Review Letters, 2006, 96, .	2.9	9
39	Modeling protein thermodynamics and fluctuations at the mesoscale. Physical Review E, 2006, 74, 041916.	0.8	9
40	Model for DNA hairpin denaturation. European Physical Journal E, 2005, 16, 235-246.	0.7	10
41	The dynamics of water in nanoporous silica studied by dielectric spectroscopy. European Physical Journal E, 2005, 17, 21-27.	0.7	43
42	Can We Model DNA at the Mesoscale?. Journal of Biological Physics, 2005, 31, 273-301.	0.7	17
43	Can One Predict DNA Transcription Start Sites by Studying Bubbles?. Physical Review Letters, 2005, 95, 218104.	2.9	62
44	On modulational instability of nonlinear waves in 1D ferromagnetic spin chains. Journal of Physics Condensed Matter, 2005, 17, 3083-3112.	0.7	20
45	A model on the origin of RNA. Physical Biology, 2005, 2, 200-206.	0.8	6
46	The Fermiâ€“Pastaâ€“Ulam â€“numerical experimentâ€“™: history and pedagogical perspectives. European Journal of Physics, 2005, 26, S3-S11.	0.3	65
47	Nonlinear Structures and Thermodynamic Instabilities in a One-Dimensional Lattice System. Physical Review Letters, 2004, 93, 258101.	2.9	28
48	Nonlinear dynamics and statistical physics of DNA. Nonlinearity, 2004, 17, R1-R40.	0.6	397
49	The statistical distributions of one-dimensional â€œturbulenceâ€• Physica D: Nonlinear Phenomena, 2004, 193, 265-277.	1.3	4
50	One-dimensional â€œturbulenceâ€• in a discrete lattice. Chaos, 2003, 13, 624-636.	1.0	13
51	Thermal denaturation of a helicoidal DNA model. Physical Review E, 2003, 68, 061909.	0.8	85
52	Some Applications of a Driven Nonlinear Lattice: Statistical Properties of Turbulence and Control of Thermal Flow. International Journal of Modern Physics B, 2003, 17, 4086-4099.	1.0	2
53	Thermodynamic Instabilities in One Dimension: Correlations, Scaling and Solitons. Journal of Statistical Physics, 2002, 107, 869-891.	0.5	37
54	Glass transition in protein hydration water. Physical Review E, 2001, 64, 011109.	0.8	21

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55	Nonlinear localization in thermalized lattices: application to DNA. Physica A: Statistical Mechanics and Its Applications, 2000, 288, 199-217.	1.2	48
56	Discreteness effects on soliton dynamics: A simple experiment. American Journal of Physics, 2000, 68, 552-555.	0.3	2
57	Order of the Phase Transition in Models of DNA Thermal Denaturation. Physical Review Letters, 2000, 85, 6-9.	2.9	108
58	Vector nonlinear Klein-Gordon lattices: General derivation of small amplitude envelope soliton solutions. Physics Letters, Section A: General, Atomic and Solid State Physics, 1999, 253, 161-167.	0.9	19
59	Helicoidal model for DNA opening. Physics Letters, Section A: General, Atomic and Solid State Physics, 1999, 253, 358-369.	0.9	141
60	A twist opening model for DNA. Journal of Biological Physics, 1999, 24, 97-114.	0.7	70
61	A first approach to reaction kinetics in large molecules. Physica D: Nonlinear Phenomena, 1998, 113, 297-306.	1.3	1
62	The pathway to energy localization in nonlinear lattices. Physica D: Nonlinear Phenomena, 1998, 119, 184-199.	1.3	88
63	Kinks motion and underdamped dc-driven dynamics of atomic monolayers. Physica D: Nonlinear Phenomena, 1998, 123, 357-367.	1.3	12
64	Simple theories of complex lattices. Physica D: Nonlinear Phenomena, 1998, 123, 403-424.	1.3	11
65	Internal Modes of Solitary Waves. Physical Review Letters, 1998, 80, 5032-5035.	2.9	192
66	Modulational instability: first step towards energy localization in nonlinear lattices. Nonlinearity, 1997, 10, 617-630.	0.6	158
67	Dynamical Transitions in Correlated Driven Diffusion in a Periodic Potential. Physical Review Letters, 1997, 78, 1295-1298.	2.9	94
68	Kink's internal modes in the Frenkel-Kontorova model. Physical Review E, 1997, 56, 6050-6064.	0.8	40
69	Local modes and localization in a multicomponent nonlinear lattice. Physical Review E, 1997, 55, 4740-4756.	0.8	31
70	Nonlinear rotating modes: Green's-function solution. Physical Review E, 1997, 55, 1922-1928.	0.8	28
71	Friction in a thin commensurate contact. Physical Review B, 1997, 56, 4987-4995.	1.1	17
72	Nonlinear mobility of the generalized Frenkel-Kontorova model. Physical Review E, 1997, 55, 3598-3612.	0.8	64

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73	Generation of high-energy localized vibrational modes in nonlinear Klein-Gordon lattices. <i>Physical Review E</i> , 1996, 53, 4143-4152.	0.8	84
74	Nonlinear modes in coupled rotator models. <i>Physica D: Nonlinear Phenomena</i> , 1996, 92, 140-163.	1.3	75
75	DNA melting: A phase transition in one dimension. <i>Mathematics and Computers in Simulation</i> , 1996, 40, 305-318.	2.4	5
76	Soliton-exchange mechanism of surface diffusion. <i>Physical Review B</i> , 1996, 54, 313-320.	1.1	20
77	Mobility and diffusivity in a generalized Frenkel-Kontorova model. <i>Physical Review B</i> , 1996, 54, 321-331.	1.1	24
78	Effective breather trapping mechanism for DNA transcription. <i>Physical Review E</i> , 1996, 53, 1011-1020.	0.8	54
79	Entropy-driven transition in a one-dimensional system. <i>Physical Review E</i> , 1995, 51, 4027-4040.	0.8	151
80	Frenkel-Kontorova model with a nonconvex transverse degree of freedom: A model for reconstructive surface growth. <i>Physical Review B</i> , 1995, 51, 17158-17167.	1.1	22
81	Interaction of discrete breathers with impurity modes. <i>Physical Review E</i> , 1994, 49, 3400-3411.	0.8	106
82	Energy Localization in Nonlinear Lattices. <i>NATO ASI Series Series B: Physics</i> , 1994, , 29-38.	0.2	4
83	Impurity effects on soliton dynamics in planar ferromagnets. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 172, 236-242.	0.9	5
84	Soliton-like behaviour in a modified sine-Gordon model. <i>Physica D: Nonlinear Phenomena</i> , 1993, 64, 355-364.	1.3	5
85	Thermodynamics of a nonlinear model for DNA denaturation. <i>Physica D: Nonlinear Phenomena</i> , 1993, 66, 35-42.	1.3	23
86	Entropy-driven DNA denaturation. <i>Physical Review E</i> , 1993, 47, R44-R47.	0.8	413
87	Energy localization in nonlinear lattices. <i>Physical Review Letters</i> , 1993, 70, 3935-3938.	2.9	209
88	Dynamics and thermodynamics of a nonlinear model for DNA denaturation. <i>Physical Review E</i> , 1993, 47, 684-695.	0.8	346
89	Kink dynamics in the periodically modulated ϕ^4 model. <i>Physical Review E</i> , 1993, 48, 548-554.	0.8	29
90	Discreteness effects on the formation and propagation of breathers in nonlinear Klein-Gordon equations. <i>Physical Review E</i> , 1993, 48, 4768-4778.	0.8	47

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91	Modulational instabilities in discrete lattices. <i>Physical Review A</i> , 1992, 46, 3198-3205.	1.0	391
92	Kink-antikink interactions in the double sine-Gordon equation. <i>Physica D: Nonlinear Phenomena</i> , 1986, 19, 165-205.	1.3	259
93	Discreteness effects on non-topological kink soliton dynamics in nonlinear lattices. <i>Physica D: Nonlinear Phenomena</i> , 1986, 19, 268-281.	1.3	55
94	Solitary wave collisions revisited. <i>Physica D: Nonlinear Phenomena</i> , 1986, 18, 47-53.	1.3	90
95	Kink dynamics in the highly discrete sine-Gordon system. <i>Physica D: Nonlinear Phenomena</i> , 1984, 14, 88-102.	1.3	324
96	Kink-antikink interactions in a modified sine-Gordon model. <i>Physica D: Nonlinear Phenomena</i> , 1983, 9, 33-51.	1.3	145