

Sergei K Nechaev

List of Publications by Year in descending order

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113
papers

1,688
citations

394421

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114
all docs

114
docs citations

114
times ranked

1019
citing authors

#	ARTICLE	IF	CITATIONS
1	The role of topological constraints in the kinetics of collapse of macromolecules. Journal De Physique, 1988, 49, 2095-2100.	1.8	374
2	Polymer chain in an array of obstacles. Physics Letters, Section A: General, Atomic and Solid State Physics, 1985, 112, 156-160.	2.1	122
3	Dynamics of a polymer chain in an array of obstacles. Physica A: Statistical Mechanics and Its Applications, 1987, 140, 506-520.	2.6	57
4	How Long Does It Take to Pull an Ideal Polymer into a Small Hole?. Physical Review Letters, 2006, 96, 228105.	7.8	57
5	Effects of topological constraints on globular polymers. Soft Matter, 2015, 11, 665-671.	2.7	56
6	Statistical Properties of Locally Free Groups \mathbb{Z}^2 with Applications to Braid Groups \mathbb{Z}^2 and Growth of Random Heaps. Communications in Mathematical Physics, 2000, 212, 469-501.	2.2	46
7	Anisotropic ballistic deposition model with links to the Ulam problem and the Tracy-Widom distribution. Physical Review E, 2004, 69, 011103.	2.1	45
8	Exact asymptotic results for the Bernoulli matching model of sequence alignment. Physical Review E, 2005, 72, 020901.	2.1	43
9	Random walks on braid groups: Brownian bridges, complexity and statistics. Journal of Physics A, 1996, 29, 2411-2433.	1.6	39
10	Topological constraints in polymer network strong collapse. Macromolecules, 1991, 24, 2789-2793.	4.8	38
11	On the plant leaf's boundary, 'jupe \tilde{A} godets' and conformal embeddings. Journal of Physics A, 2001, 34, 11069-11082.	1.6	37
12	Algebraic invariants of knots and disordered Potts model. Journal of Physics A, 1992, 25, 4659-4672.	1.6	30
13	Phase transition in a heteropolymer chain at a selective interface. Physical Review E, 1994, 50, 1912-1921.	2.1	29
14	A statistical model of intra-chromosome contact maps. Soft Matter, 2015, 11, 1019-1025.	2.7	23
15	Effective Hamiltonian of topologically stabilized polymer states. Soft Matter, 2018, 14, 6561-6570.	2.7	23
16	Topologically Driven Compatibility Enhancement in the Mixtures of Rings and Linear Chains. Journal De Physique II, 1996, 6, 1547-1555.	0.9	23
17	OVERVIEW OF POLYMER TOPOLOGY. International Journal of Modern Physics B, 1990, 04, 1809-1847.	2.0	22
18	Exact Solution of the 2D Wetting Problem in a Periodic Potential. Physical Review Letters, 1995, 74, 1815-1818.	7.8	20

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19	Eigenvalue tunneling and decay of quenched random network. <i>Physical Review E</i> , 2016, 94, 062313.	2.1	20
20	Fractal globule as a molecular machine. <i>JETP Letters</i> , 2013, 98, 242-246.	1.4	16
21	Many-body contacts in fractal polymer chains and fractional Brownian trajectories. <i>Physical Review E</i> , 2019, 99, 032501.	2.1	16
22	Adsorption of a random heteropolymer at a potential well revisited: location of transition point and design of sequences. <i>Journal of Physics A</i> , 2001, 34, 5625-5634.	1.6	15
23	Phase transitions in social networks inspired by the Schelling model. <i>Physical Review E</i> , 2018, 98, .	2.1	15
24	Topological properties of a two-dimensional polymer chain in the lattice of obstacles. <i>Journal of Physics A</i> , 1988, 21, 3659-3671.	1.6	14
25	Averaged Kauffman Invariant and Quasi-Knot Concept for Linear Polymers. <i>Europhysics Letters</i> , 1992, 20, 613-619.	2.0	14
26	Kinetics of anchoring of polymer chains on substrates with chemically active sites. <i>Physical Review E</i> , 1998, 58, 6134-6144.	2.1	14
27	Random walks on three-strand braids and on related hyperbolic groups. <i>Journal of Physics A</i> , 2003, 36, 43-66.	1.6	14
28	Ballistic deposition patterns beneath a growing Kardar-Parisi-Zhang interface. <i>Physical Review E</i> , 2010, 82, 061107.	2.1	14
29	Localization and non-ergodicity in clustered random networks. <i>Journal of Complex Networks</i> , 2020, 8, .	1.8	14
30	Anchoring of Polymers by Traps Randomly Placed on a Line. <i>Journal of Statistical Physics</i> , 2000, 98, 281-303.	1.2	13
31	On predicting regulatory genes by analysis of functional networks in <i>C. elegans</i> . <i>BioData Mining</i> , 2015, 8, 33.	4.0	13
32	Topological Relaxation of Entangled Flux Lattices: Single versus Collective Line Dynamics. <i>Physical Review Letters</i> , 2001, 87, 150602.	7.8	12
33	Wetting Transition on a One-Dimensional Disorder. <i>Journal of Statistical Physics</i> , 2008, 130, 483-502.	1.2	12
34	Self-isolation or borders closing: What prevents the spread of the epidemic better?. <i>Physical Review E</i> , 2020, 102, 010401.	2.1	12
35	Statistics of Knots and Entangled Random Walks. , 1999, , 643-733.		12
36	From statistics of regular tree-like graphs to distribution function and gyration radius of branched polymers. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2015, 48, 345003.	2.1	11

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37	On the Distribution of Surface Extrema in Several One- and Two-dimensional Random Landscapes. Journal of Statistical Physics, 2007, 126, 243-279.	1.2	10
38	On scale-free and poly-scale behaviors of random hierarchical networks. Journal of Statistical Mechanics: Theory and Experiment, 2009, 2009, P07008.	2.3	10
39	Islands of Stability in Motif Distributions of Random Networks. Physical Review Letters, 2014, 113, 095701.	7.8	10
40	Spectral peculiarity and criticality of a human connectome. Physics of Life Reviews, 2019, 31, 240-256.	2.8	10
41	Analysis of English free association network reveals mechanisms of efficient solution of Remote Association Tests. PLoS ONE, 2021, 16, e0248986.	2.5	10
42	Statistical mechanics of braided Markov chains: I. Analytic methods and numerical simulations. Journal of Statistical Physics, 1997, 88, 201-229.	1.2	9
43	Statistics of reduced words in locally free and braid groups: Abstract studies and applications to ballistic growth model. Journal of Physics A, 1998, 31, 2767-2789.	1.6	9
44	Necklace-cloverleaf transition in associating RNA-like diblock copolymers. Physical Review E, 2007, 75, 031904.	2.1	9
45	Chaotic Hamiltonian systems: Survival probability. Physical Review E, 2010, 81, 046211.	2.1	9
46	From geometric optics to plants: the eikonal equation for buckling. Soft Matter, 2017, 13, 1420-1429.	2.7	9
47	Polymer chain in a random array of topological obstacles: 1. Collapse of loops. Journal De Physique II, 1993, 3, 91-104.	0.9	8
48	Random walks on multiconnected manifolds and conformal field theory. Journal of Physics A, 1994, 27, 2289-2298.	1.6	8
49	On metric structure of ultrametric spaces. Journal of Physics A, 2004, 37, 3783-3803.	1.6	8
50	Statistics of layered zigzags: a two-dimensional generalization of TASEP. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 012002.	2.1	8
51	Fractal Globules: A New Approach to Artificial Molecular Machines. Biophysical Journal, 2014, 107, 2361-2368.	0.5	8
52	Path counting on simple graphs: from escape to localization. Journal of Statistical Mechanics: Theory and Experiment, 2017, 2017, 053301.	2.3	8
53	Rare-event statistics and modular invariance. Physics-Uspekhi, 2018, 61, 99-104.	2.2	8
54	Polymer chain in a random array of topological obstacles: Classification and statistics of complex loops. Physical Review E, 1993, 48, 3314-3320.	2.1	7

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55	Asymptotic Behavior of a Two-Dimensional Random Walk with Topological Constraints. Theory of Probability and Its Applications, 1994, 38, 296-306.	0.3	7
56	Random operator approach for word enumeration in braid groups. Journal of Physics A, 1998, 31, 5609-5630.	1.6	7
57	ON TOPOLOGICAL CORRELATIONS IN TRIVIAL KNOTS: FROM BROWNIAN BRIDGES TO CRUMPLED GLOBULES. Journal of Knot Theory and Its Ramifications, 2005, 14, 243-263.	0.3	7
58	Bethe Ansatz in the Bernoulli matching model of random sequence alignment. Physical Review E, 2008, 77, 011110.	2.1	7
59	Random hierarchical matrices: spectral properties and relation to polymers on disordered trees. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 075001.	2.1	7
60	On statistical models on super trees. Journal of High Energy Physics, 2018, 2018, 1.	4.7	7
61	Brownian flights over a circle. Physical Review E, 2020, 102, 012124.	2.1	7
62	Field-driven tracer diffusion through curved bottlenecks: fine structure of first passage events. Physical Chemistry Chemical Physics, 2020, 22, 18414-18422.	2.8	7
63	Polymer chain elasticity in the presence of a topological obstacle. Physics Letters, Section A: General, Atomic and Solid State Physics, 1988, 126, 431-433.	2.1	6
64	Title is missing!. Theoretical and Mathematical Physics(Russian Federation), 2003, 134, 142-159.	0.9	6
65	Some physical applications of random hierarchical matrices. Journal of Experimental and Theoretical Physics, 2009, 109, 485-504.	0.9	6
66	Statistics of noncoding RNAs: alignment and secondary structure prediction. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 195001.	2.1	6
67	Critical behavior in topological ensembles. Physical Review D, 2015, 92, .	4.7	6
68	Spontaneous symmetry breaking and phase coexistence in two-color networks. Physical Review E, 2016, 93, 012302.	2.1	6
69	Native ultrametricity of sparse random ensembles. Journal of Physics A: Mathematical and Theoretical, 2016, 49, 035101.	2.1	6
70	Non-backtracking walks reveal compartments in sparse chromatin interaction networks. Scientific Reports, 2020, 10, 11398.	3.3	6
71	Multifractality in Uniform Hyperbolic Lattices and in Quasi-Classical Liouville Field Theory. Journal of Statistical Physics, 2001, 102, 203-230.	1.2	5
72	Thermodynamics and topology of disordered systems: Statistics of the random knot diagrams on finite lattices. Journal of Experimental and Theoretical Physics, 2001, 93, 1119-1136.	0.9	5

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73	On the motif distribution in random block-hierarchical networks. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2010, 389, 5895-5902.	2.6	5
74	Random ballistic growth and diffusion in symmetric spaces. <i>Nuclear Physics B</i> , 2012, 862, 167-192.	2.5	5
75	VORTICES IN THE LATTICE MODEL OF PLANAR NEMATIC. <i>International Journal of Modern Physics B</i> , 1991, 05, 647-657.	2.0	4
76	New Alphabet-Dependent Morphological Transition in Random RNA Alignment. <i>Physical Review Letters</i> , 2012, 109, 018102.	7.8	4
77	Planar diagrams from optimization for concave potentials. <i>Physical Review E</i> , 2013, 87, 012102.	2.1	4
78	Evaluating Ideologies of Coronacrisis-Related Self-Isolation and Frontiers Closing by SIR Compartmental Epidemiological Model. , 2021, 3, 020210318.		4
79	Multifractality of entangled random walks and non-uniform hyperbolic spaces. <i>Journal of Physics A</i> , 2000, 33, 5631-5652.	1.6	3
80	Statistics of ideal randomly branched polymers in a semi-space. <i>European Physical Journal E</i> , 2005, 17, 209-219.	1.6	3
81	Conformal geometry and invariants of 3-strand Brownian braids. <i>Nuclear Physics B</i> , 2005, 714, 336-356.	2.5	3
82	Application of a two-length-scale field theory to the solvation of neutral and charged molecules. <i>Journal of Chemical Physics</i> , 2006, 124, 094501.	3.0	3
83	Random patterns generated by random permutations of natural numbers. <i>European Physical Journal: Special Topics</i> , 2007, 143, 143-157.	2.6	3
84	Unzipping of two random heteropolymers: Ground-state energy and finite-size effects. <i>Physical Review E</i> , 2008, 78, 011903.	2.1	3
85	From generalized directed animals to the asymmetric simple exclusion process. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2014, 2014, P10013.	2.3	3
86	Peculiar spectral statistics of ensembles of trees and star-like graphs. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2017, 2017, 073402.	2.3	3
87	Finite plateau in spectral gap of polychromatic constrained random networks. <i>Physical Review E</i> , 2017, 96, 062309.	2.1	3
88	Interface structure in colored DLA model. <i>JETP Letters</i> , 1996, 64, 549-555.	1.4	2
89	On the limiting power of the set of knots generated by 1+1- and 2+1-braids. <i>Journal of Mathematical Physics</i> , 1999, 40, 6598-6608.	1.1	2
90	Analysis of Mechanisms Underlying Adaptation Processes. <i>Biology Bulletin</i> , 2002, 29, 373-377.	0.5	2

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91	From elongated spanning trees to vicious random walks. Nuclear Physics B, 2013, 870, 55-77.	2.5	2
92	Fractal polymer globules: A new insight on prebiological evolution. Geochemistry International, 2014, 52, 1252-1259.	0.7	2
93	Statistical Properties of a Polymer Globule Formed during Collapse with the Irreversible Coalescence of Units. Polymer Science - Series C, 2018, 60, 25-36.	1.7	2
94	Fractal Dimension Meets Topology: Statistical and Topological Properties of Globular Macromolecules with Volume Interactions. Macromolecules, 2021, 54, 1281-1290.	4.8	2
95	Fixman problem revisited: When fluctuations of an elongated ideal polymer loop are non-Gaussian?. Journal of Physics A: Mathematical and Theoretical, 0, , .	2.1	2
96	Statistics of 3D Dynamically Rebuilt Trees near the Uncrossible Wall. Europhysics Letters, 1989, 10, 317-322.	2.0	1
97	Correlation Functions for Some Conformal Theories on Riemann Surfaces. Modern Physics Letters A, 1997, 12, 589-596.	1.2	1
98	Localization in a simple multichain catalytic absorption model. Journal of Physics A, 1998, 31, 1965-1980.	1.6	1
99	On the reactions $A+A \rightarrow A^*O$ at a one-dimensional periodic lattice of catalytic centers: Exact solution. JETP Letters, 2002, 76, 61-65.	1.4	1
100	A quantitative mean-field theory of the hydrophobic effect of neutral and charged molecules of arbitrary geometry. Journal of Experimental and Theoretical Physics, 2005, 101, 962-977.	0.9	1
101	Longest increasing subsequence as expectation of a simple nonlinear stochastic partial differential equation with a low noise intensity. Physical Review E, 2007, 75, 061113.	2.1	1
102	Phase transition in random planar diagrams and RNA-type matching. Physical Review E, 2013, 88, 052117.	2.1	1
103	Relaxation dynamics of a crumpled globule. Russian Journal of Physical Chemistry B, 2014, 8, 518-523.	1.3	1
104	Concepts of polymer statistical topology. Texts and Readings in Physical Sciences, 2017, , 359-398.	0.2	1
105	Equilibrium Mean-Field-Like Statistical Models with KPZ Scaling. Physics of Particles and Nuclei, 2021, 52, 185-201.	0.7	1
106	Lifshitz tails at spectral edge and holography with a finite cutoff. Journal of High Energy Physics, 2021, 2021, 1.	4.7	1
107	Upper estimate of the cardinality of the set of knots generated by one-and two-dimensional braids. Theoretical and Mathematical Physics(Russian Federation), 1999, 120, 985-996.	0.9	0
108	Alignment of RNA molecules: Binding energy and statistical properties of random sequences. Journal of Experimental and Theoretical Physics, 2012, 114, 354-364.	0.9	0

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109	Interaction of RNA molecules: Binding energy and the statistical properties of random sequences. Russian Journal of Physical Chemistry B, 2012, 6, 404-406.	1.3	0
110	Topological transition in disordered planar matching: combinatorial arcs expansion. Journal of Statistical Mechanics: Theory and Experiment, 2014, 2014, P12004.	2.3	0
111	Gaussian network approach to the description of topological constraints in the chromatin. , 2018, , .		0
112	What Social Policy Is Better: Lockdowns or Borders Closings During SARS-CoV-2 Pandemic?. , 2021, , 69-80.		0
113	Lamplighter model of a random copolymer adsorption on a line. Condensed Matter Physics, 2014, 17, 33002.	0.7	0