Sergei K Nechaev

List of Publications by Year
in descending order

113 papers	1,688 citations	394421 19 h-index	345221 36 g-index
114 all docs	114 docs citations	114 times ranked	1019 citing authors

#	Article	IF	Citations
1	What Social Policy Is Better: Lockdowns or Borders Closings During SARS-CoV-2 Pandemic?. , 2021, , 69-80.		0
2	Fractal Dimension Meets Topology: Statistical and Topological Properties of Globular Macromolecules with Volume Interactions. Macromolecules, 2021, 54, 1281-1290.	4.8	2
3	Equilibrium Mean-Field-Like Statistical Models with KPZ Scaling. Physics of Particles and Nuclei, 2021, 52, 185-201.	0.7	1
4	Lifshitz tails at spectral edge and holography with a finite cutoff. Journal of High Energy Physics, 2021, 2021, 1.	4.7	1
5	Analysis of English free association network reveals mechanisms of efficient solution of Remote Association Tests. PLoS ONE, 2021, 16, e0248986.	2.5	10
6	Evaluating Ideologies of Coronacrisis-Related Self-Isolation and Frontiers Closing by SIR Compartmental Epidemiological Model. , 2021, 3, 020210318.		4
7	Localization and non-ergodicity in clustered random networks. Journal of Complex Networks, 2020, 8, .	1.8	14
8	Self-isolation or borders closing: What prevents the spread of the epidemic better?. Physical Review E, 2020, 102, 010401.	2.1	12
9	Brownian flights over a circle. Physical Review E, 2020, 102, 012124.	2.1	7
10	Field-driven tracer diffusion through curved bottlenecks: fine structure of first passage events. Physical Chemistry Chemical Physics, 2020, 22, 18414-18422.	2.8	7
11	Non-backtracking walks reveal compartments in sparse chromatin interaction networks. Scientific Reports, 2020, 10, 11398.	3.3	6
12	Spectral peculiarity and criticality of a human connectome. Physics of Life Reviews, 2019, 31, 240-256.	2.8	10
13	Many-body contacts in fractal polymer chains and fractional Brownian trajectories. Physical Review E, 2019, 99, 032501.	2.1	16
14	Rare-event statistics and modular invariance. Physics-Uspekhi, 2018, 61, 99-104.	2.2	8
15	Gaussian network approach to the description of topological constraints in the chromatin. , 2018, , .		0
16	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
17	On statistical models on super trees. Journal of High Energy Physics, 2018, 2018, 1.	4.7	7
18	Phase transitions in social networks inspired by the Schelling model. Physical Review E, 2018, 98, .	2.1	15

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19	Effective Hamiltonian of topologically stabilized polymer states. Soft Matter, 2018, 14, 6561-6570.	2.7	23
20	Path counting on simple graphs: from escape to localization. Journal of Statistical Mechanics: Theory and Experiment, 2017, 2017, 053301.	2.3	8
21	From geometric optics to plants: the eikonal equation for buckling. Soft Matter, 2017, 13, 1420-1429.	2.7	9
22	Peculiar spectral statistics of ensembles of trees and star-like graphs. Journal of Statistical Mechanics: Theory and Experiment, 2017, 2017, 073402.	2.3	3
23	Finite plateau in spectral gap of polychromatic constrained random networks. Physical Review E, 2017, 96, 062309.	2.1	3
24	Concepts of polymer statistical topology. Texts and Readings in Physical Sciences, 2017, , 359-398.	0.2	1
25	Eigenvalue tunneling and decay of quenched random network. Physical Review E, 2016, 94, 062313.	2.1	20
26	Spontaneous symmetry breaking and phase coexistence in two-color networks. Physical Review E, 2016, 93, 012302.	2.1	6
27	Native ultrametricity of sparse random ensembles. Journal of Physics A: Mathematical and Theoretical, 2016, 49, 035101.	2.1	6
28	Critical behavior in topological ensembles. Physical Review D, 2015, 92, .	4.7	6
29	On predicting regulatory genes by analysis of functional networks in C. elegans. BioData Mining, 2015, 8, 33.	4.0	13
30	Effects of topological constraints on globular polymers. Soft Matter, 2015, 11, 665-671.	2.7	56
31	A statistical model of intra-chromosome contact maps. Soft Matter, 2015, 11, 1019-1025.	2.7	23
32	From statistics of regular tree-like graphs to distribution function and gyration radius of branched polymers. Journal of Physics A: Mathematical and Theoretical, 2015, 48, 345003.	2.1	11
33	Relaxation dynamics of a crumpled globule. Russian Journal of Physical Chemistry B, 2014, 8, 518-523.	1.3	1
34	Topological transition in disordered planar matching: combinatorial arcs expansion. Journal of Statistical Mechanics: Theory and Experiment, 2014, 2014, P12004.	2.3	0
35	Fractal polymer globules: A new insight on prebiological evolution. Geochemistry International, 2014, 52, 1252-1259.	0.7	2
36	Islands of Stability in Motif Distributions of Random Networks. Physical Review Letters, 2014, 113, 095701.	7.8	10

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37	Fractal Globules: A New Approach to Artificial Molecular Machines. Biophysical Journal, 2014, 107, 2361-2368.	0.5	8
38	From generalized directed animals to the asymmetric simple exclusion process. Journal of Statistical Mechanics: Theory and Experiment, 2014, 2014, P10013.	2.3	3
39	Lamplighter model of a random copolymer adsorption on a line. Condensed Matter Physics, 2014, 17, 33002.	0.7	0
40	Phase transition in random planar diagrams and RNA-type matching. Physical Review E, 2013, 88, 052117.	2.1	1
41	Fractal globule as a molecular machine. JETP Letters, 2013, 98, 242-246.	1.4	16
42	From elongated spanning trees to vicious random walks. Nuclear Physics B, 2013, 870, 55-77.	2.5	2
43	Planar diagrams from optimization for concave potentials. Physical Review E, 2013, 87, 012102.	2.1	4
44	Random ballistic growth and diffusion in symmetric spaces. Nuclear Physics B, 2012, 862, 167-192.	2.5	5
45	New Alphabet-Dependent Morphological Transition in Random RNA Alignment. Physical Review Letters, 2012, 109, 018102.	7.8	4
46	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
47	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
48	Statistics of layered zigzags: a two-dimensional generalization of TASEP. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 012002.	2.1	8
49	Statistics of noncoding RNAs: alignment and secondary structure prediction. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 195001.	2.1	6
50	Ballistic deposition patterns beneath a growing Kardar-Parisi-Zhang interface. Physical Review E, 2010, 82, 061107.	2.1	14
51	On the motif distribution in random block-hierarchical networks. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 5895-5902.	2.6	5
52	Chaotic Hamiltonian systems: Survival probability. Physical Review E, 2010, 81, 046211.	2.1	9
53	Some physical applications of random hierarchical matrices. Journal of Experimental and Theoretical Physics, 2009, 109, 485-504.	0.9	6
54	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

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55	On scale-free and poly-scale behaviors of random hierarchical networks. Journal of Statistical Mechanics: Theory and Experiment, 2009, 2009, P07008.	2.3	10
56	Wetting Transition on a One-Dimensional Disorder. Journal of Statistical Physics, 2008, 130, 483-502.	1.2	12
57	Bethe Ansatz in the Bernoulli matching model of random sequence alignment. Physical Review E, 2008, 77, 011110.	2.1	7
58	Unzipping of two random heteropolymers: Ground-state energy and finite-size effects. Physical Review E, 2008, 78, 011903.	2.1	3
59	Necklace-cloverleaf transition in associating RNA-like diblock copolymers. Physical Review E, 2007, 75, 031904.	2.1	9
60	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
61	Random patterns generated by random permutations of natural numbers. European Physical Journal: Special Topics, 2007, 143, 143-157.	2.6	3
62	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
63	How Long Does It Take to Pull an Ideal Polymer into a Small Hole?. Physical Review Letters, 2006, 96, 228105.	7.8	57
64	Application of a two-length-scale field theory to the solvation of neutral and charged molecules. Journal of Chemical Physics, 2006, 124, 094501.	3.0	3
65	Statistics of ideal randomly branched polymers in a semi-space. European Physical Journal E, 2005, 17, 209-219.	1.6	3
66	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
67	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
68	Conformal geometry and invariants of 3-strand Brownian braids. Nuclear Physics B, 2005, 714, 336-356.	2.5	3
69	Exact asymptotic results for the Bernoulli matching model of sequence alignment. Physical Review E, 2005, 72, 020901.	2.1	43
70	On metric structure of ultrametric spaces. Journal of Physics A, 2004, 37, 3783-3803.	1.6	8
71	Anisotropic ballistic deposition model with links to the Ulam problem and the Tracy-Widom distribution. Physical Review E, 2004, 69, 011103.	2.1	45
72	Title is missing!. Theoretical and Mathematical Physics(Russian Federation), 2003, 134, 142-159.	0.9	6

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73	Random walks on three-strand braids and on related hyperbolic groups. Journal of Physics A, 2003, 36, 43-66.	1.6	14
74	On the reactions A+A+â€−+Aâ†'0 at a one-dimensional periodic lattice of catalytic centers: Exact solution. JETP Letters, 2002, 76, 61-65.	1.4	1
75	Analysis of Mechanisms Underlying Adaptation Processes. Biology Bulletin, 2002, 29, 373-377.	0.5	2
76	Multifractality in Uniform Hyperbolic Lattices and in Quasi-Classical Liouville Field Theory. Journal of Statistical Physics, 2001, 102, 203-230.	1.2	5
77	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
78	On the plant leaf's boundary, `jupe à godets' and conformal embeddings. Journal of Physics A, 2001, 34, 11069-11082.	1.6	37
79	Adsorption of a random heteropolymer at a potential well revisited: location of transition point and design of sequences. Journal of Physics A, 2001, 34, 5625-5634.	1.6	15
80	Topological Relaxation of Entangled Flux Lattices: Single versus Collective Line Dynamics. Physical Review Letters, 2001, 87, 150602.	7.8	12
81	Anchoring of Polymers by Traps Randomly Placed on a Line. Journal of Statistical Physics, 2000, 98, 281-303.	1.2	13
82	Statistical Properties of Locally Free Groupsï¿½with Applications to Braid Groupsï¿½and Growth of Random Heaps. Communications in Mathematical Physics, 2000, 212, 469-501.	2.2	46
83	Multifractality of entangled random walks and non-uniform hyperbolic spaces. Journal of Physics A, 2000, 33, 5631-5652.	1.6	3
84	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
85	On the limiting power of the set of knots generated by 1+1- and 2+1-braids. Journal of Mathematical Physics, 1999, 40, 6598-6608.	1.1	2
86	Statistics of Knots and Entangled Random Walks. , 1999, , 643-733.		12
87	Localization in a simple multichain catalytic absorption model. Journal of Physics A, 1998, 31, 1965-1980.	1.6	1
88	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
89	Random operator approach for word enumeration in braid groups. Journal of Physics A, 1998, 31, 5609-5630.	1.6	7
90	Kinetics of anchoring of polymer chains on substrates with chemically active sites. Physical Review E, 1998, 58, 6134-6144.	2.1	14

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91	Correlation Functions for Some Conformal Theories on Riemann Surfaces. Modern Physics Letters A, 1997, 12, 589-596.	1.2	1
92	Statistical mechanics of braided Markov chains: I. Analytic methods and numerical simulations. Journal of Statistical Physics, 1997, 88, 201-229.	1.2	9
93	Interface structure in colored DLA model. JETP Letters, 1996, 64, 549-555.	1.4	2
94	Random walks on braid groups: Brownian bridges, complexity and statistics. Journal of Physics A, 1996, 29, 2411-2433.	1.6	39
95	Topologically Driven Compatibility Enhancement in the Mixtures of Rings and Linear Chains. Journal De Physique II, 1996, 6, 1547-1555.	0.9	23
96	Exact Solution of the 2D Wetting Problem in a Periodic Potential. Physical Review Letters, 1995, 74, 1815-1818.	7.8	20
97	Random walks on multiconnected manifolds and conformal field theory. Journal of Physics A, 1994, 27, 2289-2298.	1.6	8
98	Phase transition in a heteropolymer chain at a selective interface. Physical Review E, 1994, 50, 1912-1921.	2.1	29
99	Asymptotic Behavior of a Two-Dimensional Random Walk with Topological Constraints. Theory of Probability and Its Applications, 1994, 38, 296-306.	0.3	7
100	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
101	Polymer chain in a random array of topological obstaclesÂ: 1. Collapse of loops. Journal De Physique II, 1993, 3, 91-104.	0.9	8
102	Averaged Kauffman Invariant and Quasi-Knot Concept for Linear Polymers. Europhysics Letters, 1992, 20, 613-619.	2.0	14
103	Algebraic invariants of knots and disordered Potts model. Journal of Physics A, 1992, 25, 4659-4672.	1.6	30
104	Topological constraints in polymer network strong collapse. Macromolecules, 1991, 24, 2789-2793.	4.8	38
105	VORTICES IN THE LATTICE MODEL OF PLANAR NEMATIC. International Journal of Modern Physics B, 1991, 05, 647-657.	2.0	4
106	OVERVIEW OF POLYMER TOPOLOGY. International Journal of Modern Physics B, 1990, 04, 1809-1847.	2.0	22
107	Statistics of 3D Dynamically Rebuilt Trees near the Uncrossible Wall. Europhysics Letters, 1989, 10, 317-322.	2.0	1
108	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

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109	Topological properties of a two-dimensional polymer chain in the lattice of obstacles. Journal of Physics A, 1988, 21, 3659-3671.	1.6	14
110	The role of topological constraints in the kinetics of collapse of macromolecules. Journal De Physique, 1988, 49, 2095-2100.	1.8	374
111	Dynamics of a polymer chain in an array of obstacles. Physica A: Statistical Mechanics and Its Applications, 1987, 140, 506-520.	2.6	57
112	Polymer chain in an array of obstacles. Physics Letters, Section A: General, Atomic and Solid State Physics, 1985, 112, 156-160.	2.1	122
113	Fixman problem revisited: When ï¬‚uctuations of inï¬‚ated ideal polymer loop are non-Gaussian?. Journal of Physics A: Mathematical and Theoretical, 0, , .	2.1	2