Alexey Zaikin

List of Publications by Year
in descending order

127 papers	3,607 citations	147801 31 h-index	155660 55 g-index
135 all docs	135 docs citations	135 times ranked	4167 citing authors

#	Article	IF	Citations
1	Multistability and Clustering in a Population of Synthetic Genetic Oscillators via Phase-Repulsive Cell-to-Cell Communication. Physical Review Letters, 2007, 99, 148103.	7.8	206
2	Vibrational resonance and vibrational propagation in excitable systems. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 312, 348-354.	2.1	172
3	System Size Resonance in Coupled Noisy Systems and in the Ising Model. Physical Review Letters, 2002, 88, 050601.	7.8	163
4	Experimental evidence, numerics, and theory of vibrational resonance in bistable systems. Physical Review E, 2003, 67, 066119.	2.1	159
5	Serum CA19-9 Is Significantly Upregulated up to 2 Years before Diagnosis with Pancreatic Cancer: Implications for Early Disease Detection. Clinical Cancer Research, 2015, 21, 622-631.	7.0	158
6	Doubly Stochastic Resonance. Physical Review Letters, 2000, 85, 227-231.	7.8	129
7	A time-resolved proteomic and prognostic map of COVID-19. Cell Systems, 2021, 12, 780-794.e7.	6.2	125
8	Vibrational resonance in a noise-induced structure. Physical Review E, 2002, 66, 011106.	2.1	98
9	The sex hormone system in carriers of BRCA1/2 mutations: a case-control study. Lancet Oncology, The, 2013, 14, 1226-1232.	10.7	98
10	Oscillatory amplification of stochastic resonance in excitable systems. Physical Review E, 2003, 68, 026214.	2.1	82
11	Inherent multistability in arrays of autoinducer coupled genetic oscillators. Physical Review E, 2007, 75, 031916.	2.1	82
12	Systems Biology and Longevity: An Emerging Approach to Identify Innovative Anti- Aging Targets and Strategies. Current Pharmaceutical Design, 2010, 16, 802-813.	1.9	76
13	Inflammaging 2018: An update and a model. Seminars in Immunology, 2018, 40, 1-5.	5.6	76
14	Noise Induced Propagation in Monostable Media. Physical Review Letters, 2001, 88, 010601.	7.8	75
15	Early detection of cancer in the general population: a blinded case–control study of p53 autoantibodies in colorectal cancer. British Journal of Cancer, 2013, 108, 107-114.	6.4	73
16	Network, degeneracy and bow tie. Integrating paradigms and architectures to grasp the complexity of the immune system. Theoretical Biology and Medical Modelling, 2010, 7, 32.	2.1	71
17	Leptin induces upregulation of sphingosine kinase 1 in oestrogen receptor-negative breast cancer via Src family kinase-mediated, janus kinase 2-independent pathway. Breast Cancer Research, 2014, 16, 426.	5.0	68
18	The 20S Proteasome Splicing Activity Discovered by SpliceMet. PLoS Computational Biology, 2010, 6, e1000830.	3.2	63

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19	Noise-Induced Excitability in Oscillatory Media. Physical Review Letters, 2003, 91, 180601.	7.8	62
20	Doubly Stochastic Coherence via Noise-Induced Symmetry in Bistable Neural Models. Physical Review Letters, 2003, 90, 030601.	7.8	61
21	Improved early detection of ovarian cancer using longitudinal multimarker models. British Journal of Cancer, 2020, 122, 847-856.	6.4	60
22	Spatial patterns induced by additive noise. Physical Review E, 1998, 58, 4355-4360.	2.1	55
23	Noise-induced phase transitions in a pendulum with a randomly vibrating suspension axis. Physical Review E, 1996, 54, 3535-3544.	2.1	54
24	Nonequilibrium first-order phase transition induced by additive noise. Physical Review E, 1999, 60, R6275-R6278.	2.1	49
25	Cancerâ€associated autoantibodies to MUC1 and MUC4â€"A blinded caseâ€"control study of colorectal cancer in UK collaborative trial of ovarian cancer screening. International Journal of Cancer, 2014, 134, 2180-2188.	5.1	49
26	Timing Cellular Decision Making Under Noise via Cellâ€"Cell Communication. PLoS ONE, 2009, 4, e4872.	2.5	47
27	Current detection rates and time-to-detection of all identifiable *BRCA* carriers in the Greater London population. Journal of Medical Genetics, 2018, 55, 538-545.	3.2	45
28	Aberrant regulation of RANKL/OPG in women at high risk of developing breast cancer. Oncotarget, 2017, 8, 3811-3825.	1.8	45
29	Brain aging and garbage cleaning. Seminars in Immunopathology, 2020, 42, 647-665.	6.1	40
30	Comparison of Longitudinal CA125 Algorithms as a First-Line Screen for Ovarian Cancer in the General Population. Clinical Cancer Research, 2018, 24, 4726-4733.	7.0	39
31	Association of serum sex steroid receptor bioactivity and sex steroid hormones with breast cancer risk in postmenopausal women. Endocrine-Related Cancer, 2012, 19, 137-147.	3.1	36
32	Synthetic biology routes to bio-artificial intelligence. Essays in Biochemistry, 2016, 60, 381-391.	4.7	34
33	Development of PancRISK, a urine biomarker-based risk score for stratified screening of pancreatic cancer patients. British Journal of Cancer, 2020, 122, 692-696.	6.4	32
34	Simple electronic circuit model for doubly stochastic resonance. Physical Review E, 2001, 63, 020103.	2.1	31
35	Astrocyte-induced positive integrated information in neuron-astrocyte ensembles. Physical Review E, 2019, 99, 012418.	2.1	30
36	Control of noise-induced oscillations of a pendulum with a randomly vibrating suspension axis. Physical Review E, 1997, 56, 1465-1470.	2.1	28

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37	Modeling the in Vitro 20S Proteasome Activity: The Effect of PA28–αβ and of the Sequence and Length of Polypeptides on the Degradation Kinetics. Journal of Molecular Biology, 2008, 377, 1607-1617.	4.2	28
38	Parenclitic networks for predicting ovarian cancer. Oncotarget, 2018, 9, 22717-22726.	1.8	28
39	A proteomic survival predictor for COVID-19 patients in intensive care. , 2022, 1, e0000007.		28
40	Influence of additive noise on noise-induced phase transitions in nonlinear chains. Chaos, Solitons and Fractals, 1998, 9, 1367-1372.	5.1	26
41	A DNA Methylation Network Interaction Measure, and Detection of Network Oncomarkers. PLoS ONE, 2014, 9, e84573.	2.5	26
42	Speed-Dependent Cellular Decision Making in Nonequilibrium Genetic Circuits. PLoS ONE, 2012, 7, e32779.	2.5	25
43	The Human Body as a Super Network: Digital Methods to Analyze the Propagation of Aging. Frontiers in Aging Neuroscience, 2020, 12, 136.	3.4	24
44	Serial Patterns of Ovarian Cancer Biomarkers in a Prediagnosis Longitudinal Dataset. BioMed Research International, 2015, 2015, 1-6.	1.9	22
45	Astrocytes mediate analogous memory in a multi-layer neuron–astrocyte network. Neural Computing and Applications, 2022, 34, 9147-9160.	5.6	20
46	Effect of Stochastic Resonance on Bone Loss in Osteopenic Conditions. Physical Review Letters, 2008, 100, 128101.	7.8	19
47	Corruption of the Intra-Gene DNA Methylation Architecture Is a Hallmark of Cancer. PLoS ONE, 2013, 8, e68285.	2.5	19
48	Parenclitic Network Analysis of Methylation Data for Cancer Identification. PLoS ONE, 2017, 12, e0169661.	2.5	18
49	Multi-Marker Longitudinal Algorithms Incorporating HE4 and CA125 in Ovarian Cancer Screening of Postmenopausal Women. Cancers, 2020, 12, 1931.	3.7	18
50	Nonequilibrium noise-induced phase transitions in simple systems. Journal of Experimental and Theoretical Physics, 1997, 84, 197-208.	0.9	17
51	On-off intemittency phenomena in a pendulum with a randomly vibrating suspension axis. Chaos, Solitons and Fractals, 1998, 9, 157-169.	5.1	17
52	Influence of additive noise on transitions in nonlinear systems. Physical Review E, 2000, 61, 4809-4820.	2.1	17
53	Coherence resonance and polymodality in inhibitory coupled excitable oscillators. Physical Review E, 2003, 67, 066202.	2.1	17
54	Interplay of degree correlations and cluster synchronization. Physical Review E, 2016, 94, 062202.	2.1	16

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55	Sex hormone measurements using mass spectrometry and sensitive extraction radioimmunoassay and risk of estrogen receptor negative and positive breast cancer: Case control study in UK Collaborative Cancer Trial of Ovarian Cancer Screening (UKCTOCS). Steroids, 2016, 110, 62-69.	1.8	16
56	A quantitative performance study of two automatic methods for the diagnosis of ovarian cancer. Biomedical Signal Processing and Control, 2018, 46, 86-93.	5.7	16
57	Additive noise in noise-induced nonequilibrium transitions. Chaos, 2001, 11, 570-580.	2.5	15
58	Noise-memory induced excitability and pattern formation in oscillatory neural models. Physical Review E, 2006, 73, 026216.	2.1	15
59	Stochastic suppression of gene expression oscillators under intercell coupling. Physical Review E, 2007, 75, 031917.	2.1	15
60	Estimating integrated information in bidirectional neuron-astrocyte communication. Physical Review E, 2021, 103, 022410.	2.1	15
61	Stochastic resonance in an intracellular genetic perceptron. Physical Review E, 2014, 89, 032716.	2.1	14
62	Interplay between Path and Speed in Decision Making by High-Dimensional Stochastic Gene Regulatory Networks. PLoS ONE, 2012, 7, e40085.	2.5	13
63	Multi-Input Distributed Classifiers for Synthetic Genetic Circuits. PLoS ONE, 2015, 10, e0125144.	2.5	13
64	Change-point of multiple biomarkers in women with ovarian cancer. Biomedical Signal Processing and Control, 2017, 33, 169-177.	5.7	13
65	Multiplexing topologies and time scales: The gains and losses of synchrony. Physical Review E, 2017, 96, 052214.	2.1	13
66	TURBULENCE AND COHERENT STRUCTURES IN SUBSONIC SUBMERGED JETS: CONTROL OF THE TURBULENCE. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1999, 09, 397-414.	1.7	12
67	Integrated Information in the Spiking–Bursting Stochastic Model. Entropy, 2020, 22, 1334.	2.2	12
68	Expanding TREC and KREC Utility in Primary Immunodeficiency Diseases Diagnosis. Frontiers in Immunology, 2020, 11, 320.	4.8	12
69	Noise-induced inhibitory suppression of frequency-selective stochastic resonance. Physical Review E, 2006, 74, 046220.	2.1	11
70	Quantized cycling time in artificial gene networks induced by noise and intercell communication. Physical Review E, 2007, 76, 020901.	2.1	10
71	Asymmetry in Erythroid-Myeloid Differentiation Switch and the Role of Timing in a Binary Cell-Fate Decision. Frontiers in Immunology, 2013, 4, 426.	4.8	10
72	Sonographers' self-reported visualization of normal postmenopausal ovaries on transvaginal ultrasound is not reliable: results of expert review of archived images from UKCTOCS. Ultrasound in Obstetrics and Gynecology, 2018, 51, 401-408.	1.7	10

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73	NOISE-ENHANCED PROPAGATION OF BICHROMATIC SIGNALS. Fluctuation and Noise Letters, 2002, 02, L47-L52.	1.5	9
74	Nonlocal electron transport and cross-resistance peak in NSN heterostructures. JETP Letters, 2008, 87, 140-144.	1.4	9
75	Effect of the potential shape and of a Brownian particle mass on noise-induced transport. Chaos, Solitons and Fractals, 2001, 12, 1459-1471.	5.1	8
76	Microseism oscillations: from deterministic to noise-driven models. Chaos, Solitons and Fractals, 2003, 16, 195-210.	5.1	8
77	Peptide-sizeâ€"dependent active transport in the proteasome. Europhysics Letters, 2005, 69, 725-731.	2.0	8
78	Effect of Noise in Intelligent Cellular Decision Making. PLoS ONE, 2015, 10, e0125079.	2.5	8
79	Dynamical decision making in a genetic perceptron. Physica D: Nonlinear Phenomena, 2016, 318-319, 112-115.	2.8	8
80	Mirror node correlations tuning synchronization in multiplex networks. Physical Review E, 2017, 96, 062301.	2.1	8
81	Unraveling AÎ²-Mediated Multi-Pathway Calcium Dynamics in Astrocytes: Implications for Alzheimerâ€™s Disease Treatment From Simulations. Frontiers in Physiology, 2021, 12, 767892.	2.8	8
82	Quantification of spatial structure of human proximal tibial bone biopsies using 3D measures of complexity. Acta Astronautica, 2005, 56, 820-830.	3.2	7
83	Bistability and noise-enhanced velocity of rolling motion. Europhysics Letters, 2005, 69, 371-377.	2.0	7
84	Decision making in noisy bistable systems with time-dependent asymmetry. Physical Review E, 2013, 87, 012715.	2.1	7
85	Open source approaches to establishing <i>Roseobacter</i> clade bacteria as synthetic biology chassis for biogeoengineering. PeerJ, 2016, 4, e2031.	2.0	7
86	INFLUENCE OF TRANSPORT RATES ON THE PROTEIN DEGRADATION BY PROTEASOMES. Biophysical Reviews and Letters, 2006, 01, 375-386.	0.8	6
87	Complex and unexpected dynamics in simple genetic regulatory networks. International Journal of Modern Physics B, 2014, 28, 1430006.	2.0	6
88	Pattern Selection: The Importance of â€œHow You Get Thereâ€. Biophysical Journal, 2015, 108, 1307-1308.	0.5	6
89	A comparison of Monte Carlo-based Bayesian parameter estimation methods for stochastic models of genetic networks. PLoS ONE, 2017, 12, e0182015.	2.5	6
90	CalciumCV: Computer Vision Software for Calcium Signaling in Astrocytes. Lecture Notes in Computer Science, 2018, , 168-179.	1.3	6

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91	Integrated Information as a Measure of Cognitive Processes in Coupled Genetic Repressilators. Entropy, 2019, 21, 382.	2.2	6
92	Modeling Qualitative Changes in Bimanual Movements. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1997, 07, 1441-1450.	1.7	5
93	Optimal Length Transportation Hypothesis to Model Proteasome Product Size Distribution. Journal of Biological Physics, 2006, 32, 231-243.	1.5	5
94	Towards quantitative prediction of proteasomal digestion patterns of proteins. Journal of Statistical Mechanics: Theory and Experiment, 2009, 2009, P01009.	2.3	5
95	Detection of epigenomic network community oncomarkers. Annals of Applied Statistics, 2016, 10, .	1.1	5
96	Symmetry in cancer networks identified: Proposal for multicancer biomarkers. Network Science, 2019, 7, 541-555.	1.0	5
97	Parameter Estimation Methods for Chaotic Intercellular Networks. PLoS ONE, 2013, 8, e79892.	2.5	5
98	Noise-induced effects on the chaotic advection of fluid flow. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 297, 396-401.	2.1	3
99	MODELING BONE RESORPTION IN 2D CT AND 3D Î¼CT IMAGES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2005, 15, 2995-3009.	1.7	2
100	NOISE AND OSCILLATIONS IN BIOLOGICAL SYSTEMS: MULTIDISCIPLINARY APPROACH BETWEEN EXPERIMENTAL BIOLOGY, THEORETICAL MODELLING AND SYNTHETIC BIOLOGY. International Journal of Modern Physics B, 2012, 26, 1246009.	2.0	2
101	Fractional calculus model of GATA-switching for regulating the differentiation of a hematopoietic stem cell. Advances in Difference Equations, 2014, 2014, .	3.5	2
102	Decision Making in an Intracellular Genetic Classifier. Mathematical Modelling of Natural Phenomena, 2017, 12, 30-42.	2.4	2
103	Sensitivity of asymmetric rate-dependent critical systems to initial conditions: Insights into cellular decision making. Physical Review E, 2018, 98, 022317.	2.1	2
104	Short-term memory in neuron-astrocyte network. , 2020, , .		2
105	Impact of modular mitochondrial epistatic interactions on the evolution of human subpopulations. Mitochondrion, 2021, 58, 111-122.	3.4	2
106	Ensemble of correlation, parenclitic and synolitic graphs as a tool to detect universal changes in complex biological systems. Physics of Life Reviews, 2021, 38, 120-123.	2.8	2
107	Parenclitic and Synolytic Networks Revisited. Frontiers in Genetics, 2021, 12, 733783.	2.3	2
108	DOUBLY STOCHASTIC EFFECTS. Fluctuation and Noise Letters, 2002, 02, L157-L168.	1.5	1

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109	Twofold role of noise in doubly stochastic effects. , 2003, , .		1
110	Solving problems of clustering and classification of cancer diseases based on DNA methylation data. Pattern Recognition and Image Analysis, 2016, 26, 176-180.	1.0	1
111	Venn diagrams and probability in clinical research. SeÄenovskij Vestnik, 2021, 11, 5-14.	0.4	1
112	Modelling working memory in neuron-astrocyte network. , 2021, , .		1
113	Dynamics of Multicellular Synthetic Gene Networks. World Scientific Lecture Notes in Complex Systems, 2009, , 33-58.	0.1	1
114	Network markers of DNA methylation in neurodegenerative diseases. , 2020, , .		1
115	Fluctuational transport of a Brownian particle in ratchet-like gravitational potential field. Chaos, Solitons and Fractals, 2002, 13, 109-113.	5.1	0
116	Signal propagation in oscillatory media enabled by noise-induced excitability. , 2004, 5471, 102.		0
117	Constructing a Virtual Proteasome. , 0, , 373-400.		0
118	In silico analysis of microdomain-mediated trimer formation in the T cell membrane. European Physical Journal: Special Topics, 2010, 187, 21-30.	2.6	0
119	Variations in the Intragene Methylation Profiles Hallmark Induced Pluripotency. BioMed Research International, 2015, 2015, 1-9.	1.9	0
120	Systems Medicine of Cancer: Bringing Together Clinical Data and Nonlinear Dynamics of Genetic Networks. Computational and Mathematical Methods in Medicine, 2016, 2016, 1-2.	1.3	0
121	Editorial: Multiscale Modeling of Rhythm, Pattern and Information Generation: from Genome to Physiome. Frontiers in Physiology, 2020, 11, 281.	2.8	0
122	Abstract 3643: Early detection of cancer in the general population - a blinded case control study of p53 auto-antibodies in colorectal cancer in UK Collaborative Trial of Ovarian Cancer Screening (UKCTOCS). , 2012, , .		0
123	Modelling Neural Activity. , 2020, , 61-66.		0
124	Complex and Surprising Dynamics in Gene Regulatory Networks. , 2020, , 147-187.		0
125	Modelling Complex Phenomena in Physiology. , 2020, , 189-237.		0
126	Constructive Effects of Noise. , 2020, , 87-146.		0

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127	A mathematical model of in vitro hepatocellular cholesterol and lipoprotein metabolism for hyperlipidemia therapy. PLoS ONE, 2022, 17, e0264903.	2.5	0