

Zbigniew R. Struzik

List of Publications by Year in descending order

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Version: 2024-02-01

118
papers

4,382
citations

186209

28
h-index

110317

64
g-index

123
all docs

123
docs citations

123
times ranked

3396
citing authors

#	ARTICLE	IF	CITATIONS
1	Multifractality in human heartbeat dynamics. <i>Nature</i> , 1999, 399, 461-465.	13.7	1,474
2	From 1/f noise to multifractal cascades in heartbeat dynamics. <i>Chaos</i> , 2001, 11, 641-652.	1.0	431
3	What electrophysiology tells us about Alzheimer's disease: a window into the synchronization and connectivity of brain neurons. <i>Neurobiology of Aging</i> , 2020, 85, 58-73.	1.5	150
4	Noisy vestibular stimulation improves autonomic and motor responsiveness in central neurodegenerative disorders. <i>Annals of Neurology</i> , 2005, 58, 175-181.	2.8	129
5	Universal Scaling Law in Human Behavioral Organization. <i>Physical Review Letters</i> , 2007, 99, 138103.	2.9	129
6	Feature learning from incomplete EEG with denoising autoencoder. <i>Neurocomputing</i> , 2015, 165, 23-31.	3.5	127
7	Non-Gaussian heart rate as an independent predictor of mortality in patients with chronic heart failure. <i>Heart Rhythm</i> , 2008, 5, 261-268.	0.3	115
8	Critical Scale Invariance in a Healthy Human Heart Rate. <i>Physical Review Letters</i> , 2004, 93, 178103.	2.9	105
9	Phase Transition in a Healthy Human Heart Rate. <i>Physical Review Letters</i> , 2005, 95, 058101.	2.9	101
10	Model for complex heart rate dynamics in health and diseases. <i>Physical Review E</i> , 2005, 72, 041904.	0.8	90
11	Wavelet methods in (financial) time-series processing. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2001, 296, 307-319.	1.2	86
12	Criticality and Phase Transition in Stock-Price Fluctuations. <i>Physical Review Letters</i> , 2006, 96, 068701.	2.9	86
13	DETERMINING LOCAL SINGULARITY STRENGTHS AND THEIR SPECTRA WITH THE WAVELET TRANSFORM. <i>Fractals</i> , 2000, 08, 163-179.	1.8	85
14	Of Mice and Men – Universality and Breakdown of Behavioral Organization. <i>PLoS ONE</i> , 2008, 3, e2050.	1.1	83
15	Dynamics of sleep stage transitions in healthy humans and patients with chronic fatigue syndrome. <i>American Journal of Physiology - Regulatory Integrative and Comparative Physiology</i> , 2008, 294, R1980-R1987.	0.9	63
16	1/f-scaling in heart rate requires antagonistic autonomic control. <i>Physical Review E</i> , 2004, 70, 050901.	0.8	57
17	Structural and topological phase transitions on the German Stock Exchange. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2013, 392, 5963-5973.	1.2	56
18	Increased Non-Gaussianity of Heart Rate Variability Predicts Cardiac Mortality after an Acute Myocardial Infarction. <i>Frontiers in Physiology</i> , 2011, 2, 65.	1.3	49

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19	Estimator of a non-Gaussian parameter in multiplicative log-normal models. <i>Physical Review E</i> , 2007, 76, 041113.	0.8	48
20	Wavelet transform based multifractal formalism in outlier detection and localisation for financial time series. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2002, 309, 388-402.	1.2	46
21	Multiscale Probability Density Function Analysis: Non-Gaussian and Scale-Invariant Fluctuations of Healthy Human Heart Rate. <i>IEEE Transactions on Biomedical Engineering</i> , 2006, 53, 95-102.	2.5	45
22	Sleep-Stage Dynamics in Patients with Chronic Fatigue Syndrome with or without Fibromyalgia. <i>Sleep</i> , 2011, 34, 1551-60.	0.6	42
23	Wavelet-based multiscale resolution analysis of real and simulated time-series of earthquakes. <i>Geophysical Journal International</i> , 2006, 164, 63-74.	1.0	40
24	Plasma Cytokine Fluctuations over Time in Healthy Controls and Patients with Fibromyalgia. <i>Experimental Biology and Medicine</i> , 2009, 234, 232-240.	1.1	38
25	NREM Sleep Stage Transitions Control Ultradian REM Sleep Rhythm. <i>Sleep</i> , 2011, 34, 1423-1432.	0.6	38
26	Long-range negative correlation of glucose dynamics in humans and its breakdown in diabetes mellitus. <i>American Journal of Physiology - Regulatory Integrative and Comparative Physiology</i> , 2006, 291, R1638-R1643.	0.9	34
27	Long-range Correlated Glucose Fluctuations in Diabetes. <i>Methods of Information in Medicine</i> , 2007, 46, 222-226.	0.7	31
28	Ageing of Complex Heart Rate Dynamics. <i>IEEE Transactions on Biomedical Engineering</i> , 2006, 53, 89-94.	2.5	25
29	Unique Very Low-Frequency Heart Rate Variability During Deep Sleep in Humans. <i>IEEE Transactions on Biomedical Engineering</i> , 2006, 53, 28-34.	2.5	24
30	On the recurrence time of earthquakes: insight from Vrancea (Romania) intermediate-depth events. <i>Geophysical Journal International</i> , 2008, 172, 395-404.	1.0	23
31	The lack of long-range negative correlations in glucose dynamics is associated with worse glucose control in patients with diabetes mellitus. <i>Metabolism: Clinical and Experimental</i> , 2012, 61, 1041-1050.	1.5	23
32	REVEALING LOCAL VARIABILITY PROPERTIES OF HUMAN HEARTBEAT INTERVALS WITH THE LOCAL EFFECTIVE HÄ-LDER EXPONENT. <i>Fractals</i> , 2001, 09, 77-93.	1.8	21
33	Entropic Measures of Complexity of Short-Term Dynamics of Nocturnal Heartbeats in an Aging Population. <i>Entropy</i> , 2015, 17, 1253-1272.	1.1	20
34	Dynamic Structural and Topological Phase Transitions on the Warsaw Stock Exchange: A Phenomenological Approach. <i>Acta Physica Polonica A</i> , 2013, 123, 615-620.	0.2	19
35	Wavelet transform in similarity paradigm. <i>Lecture Notes in Computer Science</i> , 1998, , 295-309.	1.0	19
36	Local Effective HÄlder Exponent Estimation on the Wavelet Transform Maxima Tree. , 1999, , 93-112.		18

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37	Adaptive decision making via entropy minimization. International Journal of Approximate Reasoning, 2018, 103, 270-287.	1.9	18
38	Autonomic Imbalance Induced Breakdown of Long-range Dependence in Healthy Heart Rate. Methods of Information in Medicine, 2007, 46, 174-178.	0.7	17
39	Complexity of cardiovascular rhythms during head-up tilt test by entropy of patterns. Physiological Measurement, 2017, 38, 819-832.	1.2	17
40	Exact probability distribution function for multifractal random walk models of stocks. Europhysics Letters, 2011, 95, 28007.	0.7	13
41	THE WAVELET TRANSFORM IN THE SOLUTION TO THE INVERSE FRACTAL PROBLEM. Fractals, 1995, 03, 329-350.	1.8	12
42	Dynamic bifurcations on financial markets. Chaos, Solitons and Fractals, 2016, 88, 126-142.	2.5	12
43	Sleep stage transitions in chronic fatigue syndrome patients with or without fibromyalgia. , 2010, 2010, 5391-4.		11
44	Chronographic Imprint of Age-Induced Alterations in Heart Rate Dynamical Organization. Frontiers in Physiology, 2015, 6, 201.	1.3	11
45	Temporal condensation and dynamic $\hat{\mu}$ -transition within the complex network: an application to real-life market evolution. European Physical Journal B, 2015, 88, 1.	0.6	11
46	Multibranch multifractality and the phase transitions in time series of mean interevent times. Physical Review E, 2020, 101, 063303.	0.8	11
47	Dynamical Landscape of Heart Rhythm in Long-Term Heart Transplant Recipients: A Way to Discern Erratic Rhythms. Frontiers in Physiology, 2018, 9, 274.	1.3	10
48	Multi-command Tactile Brain Computer Interface: A Feasibility Study. Lecture Notes in Computer Science, 2013, , 50-59.	1.0	9
49	Heart Rhythm Insights Into Structural Remodeling in Atrial Tissue: Timed Automata Approach. Frontiers in Physiology, 2018, 9, 1859.	1.3	9
50	Near Scale-Free Dynamics in Neural Population Activity of Waking/Sleeping Rats Revealed by Multiscale Analysis. PLoS ONE, 2010, 5, e12869.	1.1	9
51	Short-term ECG recording for the identification of cardiac autonomic neuropathy in people with diabetes mellitus. AIP Conference Proceedings, 2007, , .	0.3	8
52	Increased heteroscedasticity of heart rate in fatal heart failure. Europhysics Letters, 2008, 82, 28005.	0.7	8
53	Phase statistics approach to human ventricular fibrillation. Physical Review E, 2009, 80, 051917.	0.8	8
54	Sleep Stage Transitions in Healthy Humans Altered by Central Monoaminergic Antagonist. Methods of Information in Medicine, 2010, 49, 458-461.	0.7	8

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55	Towards a Universal Measure of Complexity. <i>Entropy</i> , 2020, 22, 866.	1.1	8
56	Network tools for tracing the dynamics of heart rate after cardiac transplantation. <i>Chaos, Solitons and Fractals</i> , 2016, 90, 101-110.	2.5	7
57	<i>C. elegans</i> episodic swimming is driven by multifractal kinetics. <i>Scientific Reports</i> , 2020, 10, 14775.	1.6	7
58	Time Series Rule Discovery: Tough, Not Meaningless. <i>Lecture Notes in Computer Science</i> , 2003, , 32-39.	1.0	6
59	Transition Network Entropy in Characterization of Complexity of Heart Rhythm After Heart Transplantation. <i>Acta Physica Polonica B</i> , 2014, 45, 1771.	0.3	6
60	Granger Causality and Transfer Entropy for Financial Returns. <i>Acta Physica Polonica A</i> , 2015, 127, A-129-A-135.	0.2	6
61	Multistructure index characterization of heart rate and systolic blood pressure reveals precursory signs of syncope. <i>Scientific Reports</i> , 2017, 7, 419.	1.6	6
62	CUMULATIVE EFFECTIVE HÄ–LDER EXPONENT BASED INDICATOR FOR REAL-TIME FETAL HEARTBEAT ANALYSIS DURING LABOUR. , 2002, , .		6
63	Impact of the Editing of Patterns with Abnormal \$RRS\$-intervals on the Assessment of Heart Rate Variability. <i>Acta Physica Polonica B</i> , 2014, 45, 2103.	0.3	5
64	Semi-Automated Biomarker Discovery from Pharmacodynamic Effects on EEG in ADHD Rodent Models. <i>Scientific Reports</i> , 2018, 8, 5202.	1.6	5
65	Taking the pulse of the economy. <i>Quantitative Finance</i> , 2003, 3, C78-C82.	0.9	4
66	Temporal evolution for the phase histogram of ECG during human ventricular fibrillation. <i>AIP Conference Proceedings</i> , 2007, , .	0.3	4
67	Generalised heart rate statistics reveal neurally mediated homeostasis transients. <i>Europhysics Letters</i> , 2015, 110, 28002.	0.7	4
68	Multistructure index in revealing complexity of regulatory mechanisms of human cardiovascular system at rest and orthostatic stress in healthy humans. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2017, 468, 809-824.	1.2	4
69	Dynamical Pattern Representation of Cardiovascular Couplings Evoked by Head-up Tilt Test. <i>Entropy</i> , 2018, 20, 235.	1.1	4
70	Dynamic theta/beta ratio of clinical EEG in Alzheimer's disease. <i>Journal of Neuroscience Methods</i> , 2021, 359, 109219.	1.3	4
71	Complex Data: Mining Using Patterns. <i>Lecture Notes in Computer Science</i> , 2002, , 24-35.	1.0	4
72	Community Structure in Network Representation of Increments in Beat-to-beat Time Intervals of the Heart in Patients After Heart Transplantation. <i>Acta Physica Polonica B</i> , 2013, 44, 1219.	0.3	4

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73	SOLVING THE TWO-DIMENSIONAL INVERSE FRACTAL PROBLEM WITH THE WAVELET TRANSFORM. <i>Fractals</i> , 1996, 04, 469-475.	1.8	3
74	Reasoning from non-stationarity. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2002, 314, 246-255.	1.2	3
75	Complexity of the heart rhythm after heart transplantation by entropy of transition network for RR-increments of RR time intervals between heartbeats. , 2013, 2013, 6127-30.		3
76	Noise as a potential controller in antagonist inter-reacting systems. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2018, 512, 500-506.	1.2	3
77	Probing temporal correlation in ventricular interbeat intervals during atrial fibrillation with local continuous DFA. , 2004, , .		2
78	Changes in the Hurst Exponent of Heart Rate Variability during Physical Activity. <i>AIP Conference Proceedings</i> , 2005, , .	0.3	2
79	EEG epileptic seizures separation with multivariate empirical mode decomposition for diagnostic purposes. , 2013, 2013, 7128-31.		2
80	Amelioration of symptoms in neurological disorders by noisy vestibular stimulation. <i>Equilibrium Research</i> , 2008, 67, 58-64.	0.2	2
81	Fluctuation dynamics of exchange rates on Polish financial market. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2004, 344, 184-189.	1.2	1
82	Functional Roles of Noise and Fluctuations in the Human Brain. <i>AIP Conference Proceedings</i> , 2005, , .	0.3	1
83	Dual Antagonistic Autonomic Control Necessary for $1/f$ Scaling in Heart Rate. , 2005, , 141-151.		1
84	A few remarks on the analysis of physiological data for ubiquitous medicine. <i>International Congress Series</i> , 2006, 1287, 219-224.	0.2	1
85	Dynamics of Sleep Stage Transitions in Health and Disease. <i>AIP Conference Proceedings</i> , 2007, , .	0.3	1
86	Multiscale Fluctuation Analysis Revisited. <i>AIP Conference Proceedings</i> , 2007, , .	0.3	1
87	Is heart rate variability dynamics poised at criticality?. , 2014, , .		1
88	Methods for Transition Toward Computer Assisted Cognitive Examination. <i>Methods of Information in Medicine</i> , 2015, 54, 256-261.	0.7	1
89	Combining behavior and EEG analysis for exploration of dynamic effects of ADHD treatment in animal models. <i>Journal of Neuroscience Methods</i> , 2018, 298, 24-32.	1.3	1
90	Taming Surprises. , 2003, , 411-422.		1

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91	Visualization of Short-Term Heart Period Variability with Network Tools as a Method for Quantifying Autonomic Drive. , 2017, , 141-158.		1
92	Hybrid Automata Approach in Modeling the Role of Pathways Between Sinoatrial Node (the Heart) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	0.0	1
93	Econophysics vs Cardiophysics: the Dual Face of Multifractality. , 2004, , 210-215.		1
94	Title is missing!. Acta Physica Polonica B, Proceedings Supplement, 2012, 5, 181.	0.0	1
95	Spectral Power Estimation for Unevenly Spaced Motor Imagery Data. Lecture Notes in Computer Science, 2013, , 168-175.	1.0	1
96	Statistical physics of human heart rate in health and disease. Understanding Complex Systems, 2009, , 139-154.	0.3	1
97	Sensitivity Analysis ofÂaÂModel ofÂLower Limb Haemodynamics. Lecture Notes in Computer Science, 2022, , 65-77.	1.0	1
98	Econonatology: the physics of the economy in labour. Physica A: Statistical Mechanics and Its Applications, 2003, 324, 344-351.	1.2	0
99	1/ f noise in a one-dimensional charge density wave system. Europhysics Letters, 2004, 66, 385-391.	0.7	0
100	Search for flicker noise in one-dimensional charge density wave systems. , 2004, , .		0
101	Evidence for the origins and breakdown of 1/f noise in heart rate. , 2004, , .		0
102	Phase Transition and 1/f Noise in a Modified Bak-Tang-Wiesenfeld Sand Pile Model with Time-dependent Avalanche Propagation. AIP Conference Proceedings, 2005, , .	0.3	0
103	Can Electrical Vestibular Noise Be Used for the Treatment of Brain Diseases?. AIP Conference Proceedings, 2005, , .	0.3	0
104	Sleep Stage Dependence of Invariance Characteristics in Fluctuations of Healthy Human Heart Rate. AIP Conference Proceedings, 2005, , .	0.3	0
105	Criticality and Universality in Healthy Heart Rate Dynamics. AIP Conference Proceedings, 2005, , .	0.3	0
106	Characterisation of non-Gaussian fluctuations in multiplicative log-normal models. AIP Conference Proceedings, 2007, , .	0.3	0
107	Dynamics of behavioral organization and its alteration in major depression. AIP Conference Proceedings, 2007, , .	0.3	0
108	Seven-hour multiunit recordings from rats reveal very long-term correlation in the cortical activity. BMC Neuroscience, 2010, 11, .	0.8	0

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109	Multiscale analysis of long-term recordings from unanesthetized rats unveils multiple time scales inherent in the neural dynamics. <i>Neuroscience Research</i> , 2010, 68, e122.	1.0	0
110	Asymmetric intermittency observed in human heart rate dynamics. , 2011, 2011, 7743-6.		0
111	Temporal increment distributions of RR-intervals reveal dynamics of cardiac regulation in head-up tilt test. , 2014, , .		0
112	Temporal changes in complexity of cardiovascular regulation during head-up tilt test by entropic measures of fluctuations of heart period intervals and systolic blood pressure. , 2014, , .		0
113	Network approach to increments of RR-intervals for visualization of dynamics of cardiac regulation. , 2014, , .		0
114	The Society of Brains: How Alan Turing and Marvin Minsky Were Both Right. <i>Journal of Physics: Conference Series</i> , 2015, 604, 012016.	0.3	0
115	Accelerations and decelerations in heart rhythm differentiate vasovagal sensitive humans. , 2015, , .		0
116	Visualization of age-dependent circadian changes in autonomic drive on heart rhythm by network representation of RR-increments. , 2015, , .		0
117	Impact of Limits in Pathways Between Sinoatrial Node and Atrium on Heart Rhythm by Timed Automata Model. , 0, , .		0
118	Dynamical Landscape of Heart Rhythm in Discerning Erratic Rhythm in Elderly People. , 0, , .		0