

Jan W Kantelhardt

List of Publications by Year in descending order

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115
papers

10,893
citations

81900

39
h-index

33894

99
g-index

119
all docs

119
docs citations

119
times ranked

7351
citing authors

#	ARTICLE	IF	CITATIONS
1	Multifractal detrended fluctuation analysis of nonstationary time series. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2002, 316, 87-114.	2.6	2,846
2	Detecting long-range correlations with detrended fluctuation analysis. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2001, 295, 441-454.	2.6	1,164
3	Network physiology reveals relations between network topology and physiological function. <i>Nature Communications</i> , 2012, 3, 702.	12.8	548
4	Deceleration capacity of heart rate as a predictor of mortality after myocardial infarction: cohort study. <i>Lancet, The</i> , 2006, 367, 1674-1681.	13.7	502
5	Correlated and Uncorrelated Regions in Heart-Rate Fluctuations during Sleep. <i>Physical Review Letters</i> , 2000, 85, 3736-3739.	7.8	495
6	Comparison of detrended fluctuation analysis and spectral analysis for heart rate variability in sleep and sleep apnea. <i>IEEE Transactions on Biomedical Engineering</i> , 2003, 50, 1143-1151.	4.2	400
7	Long-term persistence and multifractality of precipitation and river runoff records. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	311
8	Long-Term Memory: A Natural Mechanism for the Clustering of Extreme Events and Anomalous Residual Times in Climate Records. <i>Physical Review Letters</i> , 2005, 94, 048701.	7.8	301
9	Comparison of detrending methods for fluctuation analysis. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2008, 387, 5080-5090.	2.6	277
10	Long-term persistence and multifractality of river runoff records: Detrended fluctuation studies. <i>Journal of Hydrology</i> , 2006, 322, 120-137.	5.4	265
11	Multifractality of river runoff and precipitation: comparison of fluctuation analysis and wavelet methods. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2003, 330, 240-245.	2.6	201
12	Phase transitions in physiologic coupling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 10181-10186.	7.1	199
13	Phase-rectified signal averaging detects quasi-periodicities in non-stationary data. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2006, 364, 423-434.	2.6	187
14	Experimental Evidence for Phase Synchronization Transitions in the Human Cardiorespiratory System. <i>Physical Review Letters</i> , 2007, 98, 054102.	7.8	177
15	Agreement of different methods for assessing sleep characteristics: a comparison of two actigraphs, wrist and hip placement, and self-report with polysomnography. <i>Sleep Medicine</i> , 2014, 15, 1107-1114.	1.6	175
16	Characterization of sleep stages by correlations in the magnitude and sign of heartbeat increments. <i>Physical Review E</i> , 2002, 65, 051908.	2.1	161
17	Challenges in network science: Applications to infrastructures, climate, social systems and economics. <i>European Physical Journal: Special Topics</i> , 2012, 214, 273-293.	2.6	146
18	Modulations of Heart Rate, ECG, and Cardio-Respiratory Coupling Observed in Polysomnography. <i>Frontiers in Physiology</i> , 2016, 7, 460.	2.8	129

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19	Dynamics of Heart Rate and Sleep Stages in Normals and Patients with Sleep Apnea. <i>Neuropsychopharmacology</i> , 2003, 28, S48-S53.	5.4	122
20	Statistics of return intervals in long-term correlated records. <i>Physical Review E</i> , 2007, 75, 011128.	2.1	121
21	The effect of long-term correlations on the return periods of rare events. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2003, 330, 1-7.	2.6	99
22	Aging Effects on Cardiac and Respiratory Dynamics in Healthy Subjects across Sleep Stages. <i>Sleep</i> , 2010, 33, 943-955.	1.1	97
23	Phase-rectified signal averaging for the detection of quasi-periodicities and the prediction of cardiovascular risk. <i>Chaos</i> , 2007, 17, 015112.	2.5	85
24	Extreme value statistics in records with long-term persistence. <i>Physical Review E</i> , 2006, 73, 016130.	2.1	84
25	Multifractal moving average analysis and test of multifractal model with tuned correlations. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2011, 390, 2637-2654.	2.6	82
26	On spurious and corrupted multifractality: The effects of additive noise, short-term memory and periodic trends. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2011, 390, 2480-2490.	2.6	78
27	Fluctuation and synchronization of gait intervals and gait force profiles distinguish stages of Parkinson's disease. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2007, 383, 455-465.	2.6	77
28	Return intervals of rare events in records with long-term persistence. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2004, 342, 308-314.	2.6	70
29	Long-range temporal anti-correlations in paddlefish electroreceptors. <i>Europhysics Letters</i> , 2001, 56, 454-460.	2.0	67
30	Cardiovascular and respiratory dynamics during normal and pathological sleep. <i>Chaos</i> , 2007, 17, 015116.	2.5	62
31	Excess modes in the vibrational spectrum of disordered systems and the boson peak. <i>Physical Review B</i> , 2001, 63, .	3.2	61
32	Modeling transient correlations in heartbeat dynamics during sleep. <i>Europhysics Letters</i> , 2003, 62, 147-153.	2.0	61
33	Changing climate states and stability: from Pliocene to present. <i>Climate Dynamics</i> , 2011, 37, 2437-2453.	3.8	60
34	Breathing during REM and non-REM sleep: correlated versus uncorrelated behaviour. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2003, 319, 447-457.	2.6	58
35	Nonrandom Variability of Respiration During Sleep in Healthy Humans. <i>Sleep</i> , 2005, 28, 411-417.	1.1	58
36	Fractal and Multifractal Time Series. , 2012, , 463-487.		45

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37	Comment on "Delocalization in the 1D Anderson Model with Long-Range Correlated Disorder", Physical Review Letters, 2000, 84, 198-198.	7.8	43
38	Cross-Modulated Amplitudes and Frequencies Characterize Interacting Components in Complex Systems. Physical Review Letters, 2009, 102, 098701.	7.8	42
39	Wave Localization in Complex Networks with High Clustering. Physical Review Letters, 2008, 101, 175702.	7.8	40
40	Discrete wavelet approach to multifractality. Physica A: Statistical Mechanics and Its Applications, 1995, 220, 219-238.	2.6	39
41	Are the phases in the Anderson model long-range correlated?. Physica A: Statistical Mechanics and Its Applications, 1999, 266, 461-464.	2.6	38
42	Process and outcome for international reliability in sleep scoring. Sleep and Breathing, 2015, 19, 191-195.	1.7	37
43	Performance-based approach for movement artifact removal from electroencephalographic data recorded during locomotion. PLoS ONE, 2018, 13, e0197153.	2.5	37
44	Localization in self-affine energy landscapes. Physical Review B, 2001, 64, .	3.2	34
45	Bivariate phase-rectified signal averaging. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 5091-5100.	2.6	30
46	Extended Fractons and Localized Phonons on Percolation Clusters. Physical Review Letters, 1998, 81, 4907-4910.	7.8	29
47	Bivariate phase-rectified signal averaging—a novel technique for cross-correlation analysis in noisy nonstationary signals. Journal of Electrocardiology, 2009, 42, 602-606.	0.9	28
48	Quantifying cardio-respiratory phase synchronization—a comparison of five methods using ECGs of post-infarction patients. Physiological Measurement, 2017, 38, 925-939.	2.1	28
49	Multi-photon excitation fluorescence microscopy of brain-tumour tissue and analysis of cell density. Acta Neurochirurgica, 2009, 151, 253-262.	1.7	26
50	Connectivity of EEG synchronization networks increases for Parkinson's disease patients with freezing of gait. Communications Biology, 2021, 4, 1017.	4.4	24
51	Automated synchrogram analysis applied to heartbeat and reconstructed respiration. Chaos, 2009, 19, 015106.	2.5	23
52	Coupling Between Leg Muscle Activation and EEG During Normal Walking, Intentional Stops, and Freezing of Gait in Parkinson's Disease. Frontiers in Physiology, 2019, 10, 870.	2.8	23
53	Diffusion and Conduction in Percolation Systems. , 2005, , 895-914.		22
54	Electrons and fractons on percolation structures at criticality: Sublocalization and superlocalization. Physical Review E, 1997, 56, 6693-6701.	2.1	21

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55	Sublocalization, superlocalization, and violation of standard single-parameter scaling in the Anderson model. <i>Physical Review B</i> , 2002, 66, .	3.2	21
56	Analysis of blood pressure–heart rate feedback regulation under non-stationary conditions: beyond baroreflex sensitivity. <i>Physiological Measurement</i> , 2009, 30, 631-645.	2.1	21
57	The Detection of Emerging Trends Using Wikipedia Traffic Data and Context Networks. <i>PLoS ONE</i> , 2015, 10, e0141892.	2.5	20
58	Discrete charging of a quantum dot strongly coupled to external leads. <i>Europhysics Letters</i> , 2004, 68, 699-705.	2.0	19
59	No indications of metal-insulator transition for systems of interacting electrons in two dimensions. <i>Physical Review B</i> , 2001, 63, .	3.2	18
60	Long-term correlations distinguish coarsening mechanisms in alloys. <i>Physical Review B</i> , 2003, 68, .	3.2	18
61	Excessive phase synchronization in cortical activation during locomotion in persons with Parkinson's disease. <i>Parkinsonism and Related Disorders</i> , 2019, 65, 210-216.	2.2	18
62	Revealing antiphase-domain dynamics in alloys by combining advanced statistical techniques with x-ray photon correlation spectroscopy. <i>Physical Review B</i> , 2004, 69, .	3.2	17
63	Sleep Assessment in Large Cohort Studies with High-Resolution Accelerometers. <i>Sleep Medicine Clinics</i> , 2016, 11, 469-488.	2.6	16
64	Spikes in the Current Self-Oscillations of Doped GaAs/AlAs Superlattices. <i>Physica Status Solidi (B): Basic Research</i> , 1997, 204, 500-503.	1.5	15
65	Transitions in effective scaling behavior of accelerometric time series across sleep and wake. <i>Europhysics Letters</i> , 2013, 103, 68002.	2.0	15
66	Statistische Physik: Langzeitkorrelationen in der Natur: Von Klima, Erbgut und Herzrhythmus: Die Fluktuationsanalyse erlaubt es, Klimamodelle zu testen oder Schlafphasen zu untersuchen. <i>Physik Journal</i> , 2001, 57, 49-54.	0.1	14
67	Scaling behavior of EEG amplitude and frequency time series across sleep stages. <i>Europhysics Letters</i> , 2015, 112, 18001.	2.0	14
68	Fluctuations in Wikipedia access-rate and edit-event data. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2012, 391, 6101-6111.	2.6	13
69	Reconstruction of the respiratory signal through ECG and wrist accelerometer data. <i>Scientific Reports</i> , 2020, 10, 14530.	3.3	11
70	Anderson localization in a random correlated energy landscape. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999, 266, 492-496.	2.6	10
71	Parallel magnetoconductance of interacting electrons in a two-dimensional disordered system. <i>Physical Review B</i> , 2002, 65, .	3.2	10
72	Analytical and simulation models for collaborative localization. <i>Journal of Computational Science</i> , 2015, 6, 1-10.	2.9	9

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73	Age and gender dependency of physiological networks in sleep. <i>Physiological Measurement</i> , 2017, 38, 959-975.	2.1	9
74	Comparison of models and lattice-gas simulations for Liesegang patterns. <i>European Physical Journal: Special Topics</i> , 2008, 161, 121-141.	2.6	8
75	Nocturnal Dynamics of Sleepâ€“Wake Transitions in Patients With Narcolepsy. <i>Sleep</i> , 2017, 40, .	1.1	8
76	A Biased Diffusion Approach to Sleep Dynamics Reveals Neuronal Characteristics. <i>Biophysical Journal</i> , 2019, 117, 987-997.	0.5	8
77	Unique sleepâ€“stage transitions determined by obstructive sleep apnea severity, age and gender. <i>Journal of Sleep Research</i> , 2020, 29, e12895.	3.2	8
78	Fractal and Multifractal Time Series. , 2015, , 1-37.		8
79	The Reconstruction of Causal Networks in Physiology. <i>Frontiers in Network Physiology</i> , 2022, 2, .	1.8	8
80	Wavelets and multifractality: Application to Anderson localized wave functions. <i>Europhysics Letters</i> , 1996, 35, 641-646.	2.0	7
81	Localization behavior of vibrational modes. <i>Annalen Der Physik</i> , 1998, 7, 372-382.	2.4	7
82	Wave functions in the Anderson model and in the quantum percolation model: a comparison. <i>Annalen Der Physik</i> , 1998, 7, 400-405.	2.4	7
83	Effects of Parkinson's disease on brain-wave phase synchronisation and cross-modulation. <i>Europhysics Letters</i> , 2010, 89, 48001.	2.0	7
84	Coarsening dynamics in elastically anisotropic alloys. <i>Physical Review B</i> , 2006, 73, .	3.2	6
85	Phases of scaling and cross-correlation behavior in traffic. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2013, 392, 5742-5756.	2.6	6
86	Detection and analysis of pulse waves during sleep via wrist-worn actigraphy. <i>PLoS ONE</i> , 2019, 14, e0226843.	2.5	6
87	Capability of processed EEG parameters to monitor conscious sedation in endoscopy is similar to general anaesthesia. <i>United European Gastroenterology Journal</i> , 2021, 9, 354-361.	3.8	6
88	The Statistics of Return Intervals, Maxima, and Centennial Events Under the Influence of Long-Term Correlations. , 2011, , 2-43.		6
89	Detrended Fluctuation Studies of Long-Term Persistence and Multifractality of Precipitation and River Runoff Records. , 2011, , 216-248.		6
90	Hadoop. TS: Large-Scale Time-Series Processing. <i>International Journal of Computer Applications</i> , 2013, 74, 1-8.	0.2	6

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91	Localization in a highly correlated potential landscape. <i>Journal of Molecular Liquids</i> , 2000, 86, 151-161.	4.9	5
92	Detrended fluctuation analysis in x-ray photon correlation spectroscopy for determining coarsening dynamics in alloys. <i>Physical Review E</i> , 2006, 74, 041107.	2.1	5
93	Self-organized multistability in the forest fire model. <i>Physical Review E</i> , 2021, 104, L012201.	2.1	5
94	Quantifying Heartbeat Dynamics by Magnitude and Sign Correlations. <i>AIP Conference Proceedings</i> , 2003, , .	0.4	4
95	Consequences of fluctuations in Liesegang pattern formation. <i>Europhysics Letters</i> , 2008, 84, 48006.	2.0	4
96	Level statistics for vibrational eigenstates of percolation clusters. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999, 266, 76-80.	2.6	3
97	Vibrational models for the Boson peak. <i>Journal of Non-Crystalline Solids</i> , 2002, 307-310, 96-102.	3.1	3
98	Equidistant band formation of precipitation in a reaction–diffusion process. <i>New Journal of Physics</i> , 2010, 12, 023009.	2.9	3
99	Cardiovascular and respiratory dynamics in patients with sleep apnea. , 2010, 2010, 276-9.		3
100	Reconstruction of Pulse Wave and Respiration From Wrist Accelerometer During Sleep. <i>IEEE Transactions on Biomedical Engineering</i> , 2022, 69, 830-839.	4.2	3
101	Evacuation in the Social Force Model is not Stationary. <i>Acta Physica Polonica A</i> , 2012, 121, B-77-B-81.	0.5	3
102	Magnetoresistance study for systems of interacting electrons in two dimensions. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2001, 302, 359-367.	2.6	2
103	Strategies in Crowd and Crowd Structure. <i>Acta Physica Polonica A</i> , 2013, 123, 522-525.	0.5	1
104	DETERMINISTIC ANTS IN LABYRINTH – INFORMATION GAINED BY MAP SHARING. <i>International Journal of Modern Physics C</i> , 2013, 24, 1350035.	1.7	1
105	Physiological Relevance of Scaling of Heart Phenomena. , 2002, , 258-281.		1
106	Ad-Hoc Information Spread between Mobile Devices: A Case Study in Analytical Modeling of Controlled Self-organization in IT Systems. <i>Lecture Notes in Computer Science</i> , 2010, , 101-112.	1.3	1
107	Statistics of Return Intervals and Extreme Events in Long-term Correlated Time Series. , 2007, , 339-367.		1
108	Role of Boundary Conditions in the Parallel Magnetoconductance of a Two Dimensional Disordered System. <i>Physica Status Solidi (B): Basic Research</i> , 2002, 230, 101-105.	1.5	0

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109	Wave Localization on Complex Networks. , 2011, , 75-96.		0
110	Detection and analysis of pulse waves during sleep via wrist-worn actigraphy. , 2019, 14, e0226843.		0
111	Detection and analysis of pulse waves during sleep via wrist-worn actigraphy. , 2019, 14, e0226843.		0
112	Detection and analysis of pulse waves during sleep via wrist-worn actigraphy. , 2019, 14, e0226843.		0
113	Detection and analysis of pulse waves during sleep via wrist-worn actigraphy. , 2019, 14, e0226843.		0
114	Wave functions in the Anderson model and in the quantum percolation model: a comparison. Annalen Der Physik, 1998, 510, 400-405.	2.4	0
115	Localization behavior of vibrational modes. Annalen Der Physik, 1998, 510, 372-382.	2.4	0