

Nicholas W Watkins

List of Publications by Year in descending order

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Version: 2024-02-01

94
papers

3,273
citations

201575

27
h-index

161767

54
g-index

103
all docs

103
docs citations

103
times ranked

3652
citing authors

#	ARTICLE	IF	CITATIONS
1	Revisiting Lévy flight search patterns of wandering albatrosses, bumblebees and deer. <i>Nature</i> , 2007, 449, 1044-1048.	13.7	736
2	Storylines: an alternative approach to representing uncertainty in physical aspects of climate change. <i>Climatic Change</i> , 2018, 151, 555-571.	1.7	317
3	A simple avalanche model as an analogue for magnetospheric activity. <i>Geophysical Research Letters</i> , 1998, 25, 2397-2400.	1.5	152
4	Overview of the JET results in support to ITER. <i>Nuclear Fusion</i> , 2017, 57, 102001.	1.6	150
5	25 Years of Self-organized Criticality: Concepts and Controversies. <i>Space Science Reviews</i> , 2016, 198, 3-44.	3.7	132
6	A Brief History of Long Memory: Hurst, Mandelbrot and the Road to ARFIMA, 1951–1980. <i>Entropy</i> , 2017, 19, 437.	1.1	98
7	Evidence for a solar wind origin of the power law burst lifetime distribution of the AE indices. <i>Geophysical Research Letters</i> , 2000, 27, 1087-1090.	1.5	83
8	Efficient generation of energetic ions in multi-ion plasmas by radio-frequency heating. <i>Nature Physics</i> , 2017, 13, 973-978.	6.5	73
9	The Structure of Climate Variability Across Scales. <i>Reviews of Geophysics</i> , 2020, 58, e2019RG000657.	9.0	71
10	Finite size scaling in the solar wind magnetic field energy density as seen by WIND. <i>Geophysical Research Letters</i> , 2002, 29, 86-1-86-4.	1.5	56
11	Overlapping Magnetic Activity Cycles and the Sunspot Number: Forecasting Sunspot Cycle 25 Amplitude. <i>Solar Physics</i> , 2020, 295, 1.	1.0	55
12	First passage and first hitting times of Lévy flights and Lévy walks. <i>New Journal of Physics</i> , 2019, 21, 103028.	1.2	54
13	Power law distributions of burst duration and interburst interval in the solar wind: Turbulence or dissipative self-organized criticality?. <i>Physical Review E</i> , 2000, 62, 8794-8797.	0.8	51
14	Overview of the JET results. <i>Nuclear Fusion</i> , 2015, 55, 104001.	1.6	50
15	Avalanching and Self-Organised Criticality, a paradigm for geomagnetic activity?. , 2001, 95, 293-307.		43
16	Towards Synthesis of Solar Wind and Geomagnetic Scaling Exponents: A Fractional Lévy Motion Model. <i>Space Science Reviews</i> , 2005, 121, 271-284.	3.7	43
17	Robustness of collective behaviour in strongly driven avalanche models: Magnetospheric implications. <i>Geophysical Research Letters</i> , 1999, 26, 2617-2620.	1.5	41
18	Robustness of estimators of long-range dependence and self-similarity under non-Gaussianity. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012, 370, 1250-1267.	1.6	41

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19	Warming Trends in Summer Heatwaves. <i>Geophysical Research Letters</i> , 2019, 46, 1634-1640.	1.5	38
20	Scaling collapse and structure functions: identifying self-affinity in finite length time series. <i>Nonlinear Processes in Geophysics</i> , 2005, 12, 767-774.	0.6	37
21	A spatiotemporal analysis of U.S. station temperature trends over the last century. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 7427-7434.	1.2	37
22	Extremum statistics: a framework for data analysis. <i>Nonlinear Processes in Geophysics</i> , 2002, 9, 409-418.	0.6	35
23	Using the Index Over the Last 14 Solar Cycles to Characterize Extreme Geomagnetic Activity. <i>Geophysical Research Letters</i> , 2020, 47, e2019GL086524.	1.5	34
24	A Dynamical Systems Explanation of the Hurst Effect and Atmospheric Low-Frequency Variability. <i>Scientific Reports</i> , 2015, 5, 9068.	1.6	32
25	Scaling in long term data sets of geomagnetic indices and solar wind $\dot{\mu}$ as seen by WIND spacecraft. <i>Geophysical Research Letters</i> , 2003, 30, .	1.5	30
26	Application of computational mechanics to the analysis of natural data: An example in geomagnetism. <i>Physical Review E</i> , 2003, 67, 016203.	0.8	30
27	Scaling of solar wind $\dot{\mu}$ and the AU, AL and AE indices as seen by WIND. <i>Geophysical Research Letters</i> , 2002, 29, 35-1-35-4.	1.5	29
28	Mapping climate change in European temperature distributions. <i>Environmental Research Letters</i> , 2013, 8, 034031.	2.2	29
29	(A)phantasia and severely deficient autobiographical memory: Scientific and personal perspectives. <i>Cortex</i> , 2018, 105, 41-52.	1.1	29
30	Testing the SOC hypothesis for the magnetosphere. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 2001, 63, 1435-1445.	0.6	27
31	Quantifying the Solar Cycle Modulation of Extreme Space Weather. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL087795.	1.5	27
32	Kinetic equation of linear fractional stable motion and applications to modeling the scaling of intermittent bursts. <i>Physical Review E</i> , 2009, 79, 041124.	0.8	26
33	Scaling in the space climatology of the auroral indices: is SOC the only possible description?. <i>Nonlinear Processes in Geophysics</i> , 2002, 9, 389-397.	0.6	24
34	On the fractal nature of the magnetic field energy density in the solar wind. <i>Geophysical Research Letters</i> , 2007, 34, .	1.5	23
35	14 MeV calibration of JET neutron detectorsâ€”phase 1: calibration and characterization of the neutron source. <i>Nuclear Fusion</i> , 2018, 58, 026012.	1.6	22
36	Timing Terminators: Forecasting Sunspot Cycle 25 Onset. <i>Solar Physics</i> , 2020, 295, 1.	1.0	22

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37	Investigating turbulent structure of ionospheric plasma velocity using the Halley SuperDARN radar. <i>Nonlinear Processes in Geophysics</i> , 2007, 14, 799-809.	0.6	21
38	Comment on "Universal Fluctuations in Correlated Systems". <i>Physical Review Letters</i> , 2002, 89, 208901, author reply 208902.	2.9	19
39	The Heavens in a Pile of Sand. <i>Science</i> , 2002, 298, 979-980.	6.0	18
40	Temperature variability implies greater economic damages from climate change. <i>Nature Communications</i> , 2020, 11, 5028.	5.8	18
41	Efficient Bayesian inference for natural time series using ARFIMA processes. <i>Nonlinear Processes in Geophysics</i> , 2015, 22, 679-700.	0.6	18
42	Rhythm and Randomness in Human Contact. , 2010, , .		17
43	High-resolution tungsten spectroscopy relevant to the diagnostic of high-temperature tokamak plasmas. <i>Physical Review A</i> , 2018, 97, .	1.0	17
44	Evidence for a solar wind origin of the power law burst lifetime distribution of the AE indices. <i>Geophysical Research Letters</i> , 2000, 27, 1087-1090.	1.5	17
45	Parameterization of chaotic particle dynamics in a simple time-dependent field reversal. <i>Journal of Geophysical Research</i> , 1993, 98, 165-177.	3.3	16
46	Analytical determination of power-law index for the Chapman et al. sandpile (FSOC) analog for magnetospheric activity - A renormalization-group analysis. <i>Geophysical Research Letters</i> , 2000, 27, 1367-1370.	1.5	14
47	Natural Complexity. <i>Science</i> , 2008, 320, 323-324.	6.0	13
48	Reproducible Aspects of the Climate of Space Weather Over the Last Five Solar Cycles. <i>Space Weather</i> , 2018, 16, 1128-1142.	1.3	13
49	Robustness and scaling: key observables in the complex dynamic magnetosphere. <i>Plasma Physics and Controlled Fusion</i> , 2004, 46, B157-B166.	0.9	12
50	Topological isomorphisms of human brain and financial market networks. <i>Frontiers in Systems Neuroscience</i> , 2011, 5, 75.	1.2	12
51	Trends in Winter Warm Spells in the Central England Temperature Record. <i>Journal of Applied Meteorology and Climatology</i> , 2020, 59, 1069-1076.	0.6	12
52	A 25-year record of 10 kHz sferics noise in Antarctica: Implications for tropical lightning levels. <i>Geophysical Research Letters</i> , 1998, 25, 4353-4356.	1.5	11
53	Scaling and commonality in anomalous fluctuation statistics in models for turbulence and ferromagnetism. <i>Journal of Physics A</i> , 2005, 38, 2289-2297.	1.6	11
54	Pseudononstationarity in the scaling exponents of finite-interval time series. <i>Physical Review E</i> , 2009, 79, 036109.	0.8	11

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55	On estimating local long-term climate trends. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120287.	1.6	11
56	Systematic inference of the long-range dependence and heavy-tail distribution parameters of ARFIMA models. Physica A: Statistical Mechanics and Its Applications, 2017, 473, 60-71.	1.2	11
57	Exactly solvable sandpile with fractal avalanching. Physical Review E, 1999, 59, 6356-6360.	0.8	10
58	Tritium distributions on W-coated divertor tiles used in the third JET ITER-like wall campaign. Nuclear Materials and Energy, 2019, 18, 258-261.	0.6	10
59	Complexity and Extreme Events in Geosciences: An Overview. Geophysical Monograph Series, 2012, , 1-16.	0.1	9
60	Robust statistical properties of the size of large burst events in AE. Geophysical Research Letters, 2015, 42, 9197-9202.	1.5	9
61	Suspected wave-particle interactions coincident with a pancake distribution as seen by the CRRES spacecraft. Advances in Space Research, 1996, 17, 83-87.	1.2	8
62	Diurnal and annual variations in 10-kHz radio noise. Radio Science, 1999, 34, 933-938.	0.8	8
63	What can we infer about the underlying physics from burst distributions observed in an RMHD simulation?. Planetary and Space Science, 2001, 49, 1233-1237.	0.9	8
64	AMBIGUITIES IN DETERMINATION OF SELF-AFFINITY IN THE AE-INDEX TIME SERIES. Fractals, 2001, 09, 471-479.	1.8	8
65	Macroscopic control parameter for avalanche models for bursty transport. Physics of Plasmas, 2009, 16, .	0.7	8
66	Bunched black (and grouped grey) swans: Dissipative and non-dissipative models of correlated extreme fluctuations in complex geosystems. Geophysical Research Letters, 2013, 40, 402-410.	1.5	8
67	Extreme-value statistics from Lagrangian convex hull analysis for homogeneous turbulent Boussinesq convection and MHD convection. New Journal of Physics, 2017, 19, 065006.	1.2	8
68	Relationship of edge localized mode burst times with divertor flux loop signal phase in JET. Physics of Plasmas, 2014, 21, .	0.7	7
69	Limits to the quantification of local climate change. Environmental Research Letters, 2015, 10, 094018.	2.2	7
70	Control system-plasma synchronization and naturally occurring edge localized modes in a tokamak. Physics of Plasmas, 2018, 25, 062511.	0.7	7
71	Signatures of dual scaling regimes in a simple avalanche model for magnetospheric activity. Journal of Atmospheric and Solar-Terrestrial Physics, 2001, 63, 1361-1370.	0.6	6
72	Comment on "Coexistence of Self-Organized Criticality and Intermittent Turbulence in the Solar Corona". Physical Review Letters, 2009, 103, 039501; author reply 039502.	2.9	6

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73	Avalanching systems under intermediate driving rate. Plasma Physics and Controlled Fusion, 2009, 51, 124006.	0.9	6
74	Magnetic Topology of Actively Evolving and Passively Convecting Structures in the Turbulent Solar Wind. Physical Review Letters, 2021, 126, 125101.	2.9	6
75	Response to "Limitations in the Hilbert Transform Approach to Locating Solar Cycle Terminators" by R. Booth. Solar Physics, 2021, 296, 1.	1.0	6
76	Lightning atmospheric count rates observed at Halley, Antarctica. Journal of Atmospheric and Solar-Terrestrial Physics, 2001, 63, 993-1003.	0.6	5
77	Mandelbrot's Stochastic Time Series Models. Earth and Space Science, 2019, 6, 2044-2056.	1.1	5
78	Correction to "Scaling of solar wind μ and the AU, AL and AE indices as seen by WIND" by B. Hnat, S. C. Chapman, G. Rowlands, N. W. Watkins, and M. P. Freeman. Geophysical Research Letters, 2003, 30, .	1.5	4
79	The global build-up to intrinsic edge localized mode bursts seen in divertor full flux loops in JET. Physics of Plasmas, 2015, 22, .	0.7	4
80	The Dependence of Solar Wind Burst Size on Burst Duration and Its Invariance Across Solar Cycles 23 and 24. Journal of Geophysical Research: Space Physics, 2018, 123, 7196-7210.	0.8	4
81	Variation of Geomagnetic Index Empirical Distribution and Burst Statistics Across Successive Solar Cycles. Journal of Geophysical Research: Space Physics, 2022, 127, e2021JA029986.	0.8	4
82	Delay coordinates: a sensitive indicator of nonlinear dynamics in single charged particle motion in magnetic reversals. Annales Geophysicae, 1995, 13, 836-842.	0.6	3
83	On Self-Similar and Multifractal Models for the Scaling of Extreme Bursty Fluctuations in Space Plasmas. Geophysical Monograph Series, 2012, , 299-313.	0.1	3
84	Fractional Stochastic Models for Heavy Tailed, and Long-Range Dependent, Fluctuations in Physical Systems. , 2016, , 340-368.		3
85	The global build-up to intrinsic ELM bursts and comparison with pellet triggered ELMs seen in JET. Nuclear Fusion, 2017, 57, 022017.	1.6	3
86	On the continuing relevance of Mandelbrot's non-ergodic fractional renewal models of 1963 to 1967. European Physical Journal B, 2017, 90, 1.	0.6	3
87	Scaling parameters and parametric coordinates in static and time dependent magnetic reversals. Advances in Space Research, 1996, 18, 285-289.	1.2	2
88	Comparison of VLF sferics intensities at Halley, Antarctica, with tropical lightning and temperature. Radio Science, 2001, 36, 1053-1064.	0.8	2
89	Intrinsic ELMing in ASDEX Upgrade and global control system-plasma self-entrainment. Nuclear Fusion, 2018, 58, 126003.	1.6	2
90	The Sun's Magnetic (Hale) Cycle and 27 Day Recurrences in the aa Geomagnetic Index. Astrophysical Journal, 2021, 917, 54.	1.6	2

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91	Citation rates. <i>Astronomy and Geophysics</i> , 2004, 45, 5.9-5.9.	0.1	0
92	Investigating the turbulent structure of ionospheric plasma velocities on open and closed magnetic field lines. <i>AIP Conference Proceedings</i> , 2007, , .	0.3	0
93	In-Situ Spacecraft Particle Autocorrelation and Cross-Correlation- Theory and Practice. <i>Geophysical Monograph Series</i> , 2013, , 319-324.	0.1	0
94	On Generalized Langevin Dynamics and the Modelling of Global Mean Temperature. <i>Springer Proceedings in Complexity</i> , 2021, , 433-441.	0.2	0