Jonathan F Donges

List of Publications by Year
in descending order

100 papers	9,452 citations	81900 39 h-index	42399 92 g-index
151 all docs	151 docs citations	151 times ranked	8717 citing authors

#	Article	IF	Citations
1	Trajectories of the Earth System in the Anthropocene. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 8252-8259.	7.1	1,832
2	Complex network approach for recurrence analysis of time series. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 4246-4254.	2.1	501
3	Recurrence networksâ€"a novel paradigm for nonlinear time series analysis. New Journal of Physics, 2010, 12, 033025.	2.9	489
4	Complex networks in climate dynamics. European Physical Journal: Special Topics, 2009, 174, 157-179.	2.6	416
5	Social tipping dynamics for stabilizing Earthâ€™s climate by 2050. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 2354-2365.	7.1	394
6	Complex network approaches to nonlinear time series analysis. Physics Reports, 2019, 787, 1-97.	25.6	370
7	RECURRENCE-BASED TIME SERIES ANALYSIS BY MEANS OF COMPLEX NETWORK METHODS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2011, 21, 1019-1046.	1.7	350
8	Armed-conflict risks enhanced by climate-related disasters in ethnically fractionalized countries. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 9216-9221.	7.1	280
9	Interacting tipping elements increase risk of climate domino effects under global warming. Earth System Dynamics, 2021, 12, 601-619.	7.1	227
10	Human impacts on planetary boundaries amplified by Earth system interactions. Nature Sustainability, 2020, 3, 119-128.	23.7	217
11	Nonlinear detection of paleoclimate-variability transitions possibly related to human evolution. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 20422-20427.	7.1	208
12	Identifying causal gateways and mediators in complex spatio-temporal systems. Nature Communications, 2015, 6, 8502.	12.8	207
13	Using Causal Effect Networks to Analyze Different Arctic Drivers of Midlatitude Winter Circulation. Journal of Climate, 2016, 29, 4069-4081.	3.2	197
14	On the importance of cascading moisture recycling in South America. Atmospheric Chemistry and Physics, 2014, 14, 13337-13359.	4.9	181
15	Investigating the topology of interacting networks. European Physical Journal B, 2011, 84, 635-651.	1.5	165
16	Amplified Rossby waves enhance risk of concurrent heatwaves in major breadbasket regions. Nature Climate Change, 2020, 10, 48-53.	18.8	164
17	Defining tipping points for social-ecological systems scholarshipâ€"an interdisciplinary literature review. Environmental Research Letters, 2018, 13, 033005.	5.2	161
18	Stewardship of global collective behavior. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	129

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19	The hysteresis of the Antarctic Ice Sheet. Nature, 2020, 585, 538-544.	27.8	115
20	Ambiguities in recurrence-based complex network representations of time series. Physical Review E, 2010, 81, 015101.	2.1	113
21	Visibility graph analysis of geophysical time series: Potentials and possible pitfalls. Acta Geophysica, 2012, 60, 589-623.	2.0	101
22	Analytical framework for recurrence network analysis of time series. Physical Review E, 2012, 85, 046105.	2.1	96
23	Event coincidence analysis for quantifying statistical interrelationships between event time series. European Physical Journal: Special Topics, 2016, 225, 471-487.	2.6	93
24	Multi-method evidence for when and how climate-related disasters contribute to armed conflict risk. Global Environmental Change, 2020, 62, 102063.	7.8	88
25	Geometric detection of coupling directions by means of inter-system recurrence networks. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 3504-3513.	2.1	87
26	Unified functional network and nonlinear time series analysis for complex systems science: The<tt>pyunicorn</tt>package. Chaos, 2015, 25, 113101.	2.5	84
27	Disentangling different types of El NiÃ±o episodes by evolving climate network analysis. Physical Review E, 2013, 88, 052807.	2.1	79
28	Achieving the 17 Sustainable Development Goals within 9 planetary boundaries. Global Sustainability, 2019, 2, .	3.3	79
29	Coincidences of climate extremes and anomalous vegetation responses: comparing tree ring patterns to simulated productivity. Biogeosciences, 2015, 12, 373-385.	3.3	75
30	Global warming due to loss of large ice masses and Arctic summer sea ice. Nature Communications, 2020, 11, 5177.	12.8	67
31	Identifying complex periodic windows in continuous-time dynamical systems using recurrence-based methods. Chaos, 2010, 20, 043130.	2.5	65
32	Past abrupt changes, tipping points and cascading impacts in the Earth system. Nature Geoscience, 2021, 14, 550-558.	12.9	62
33	Earth system data cubes unravel global multivariate dynamics. Earth System Dynamics, 2020, 11, 201-234.	7.1	59
34	Towards representing human behavior and decision making in Earth system models â€“ an overview of techniques and approaches. Earth System Dynamics, 2017, 8, 977-1007.	7.1	57
35	Non-linear regime shifts in Holocene Asian monsoon variability: potential impacts on cultural change and migratory patterns. Climate of the Past, 2015, 11, 709-741.	3.4	55
36	Human agency in the Anthropocene. Ecological Economics, 2020, 167, 106463.	5.7	53

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37	Closing the loop: Reconnecting human dynamics to Earth System science. Infrastructure Asset Management, 2017, 4, 151-157.	1.6	48
38	Caring for the future can turn tragedy into comedy for long-term collective action under risk of collapse. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 12915-12922.	7.1	48
39	A climate networkâ€based index to discriminate different types of El NiÃ±o and La NiÃ±a. Geophysical Research Letters, 2016, 43, 7176-7185.	4.0	47
40	Social tipping processes towards climate action: A conceptual framework. Ecological Economics, 2022, 192, 107242.	5.7	47
41	Coherent response of the Indian Monsoon Rainfall to Atlantic Multi-decadal Variability over the last 2000 years. Scientific Reports, 2020, 10, 1302.	3.3	43
42	The tipping points and early warning indicators for Pine Island Glacier, West Antarctica. Cryosphere, 2021, 15, 1501-1516.	3.9	42
43	How complex climate networks complement eigen techniques for the statistical analysis of climatological data. Climate Dynamics, 2015, 45, 2407-2424.	3.8	41
44	Impact of temperature and precipitation extremes on the flowering dates of four German wildlife shrub species. Biogeosciences, 2016, 13, 5541-5555.	3.3	41
45	Emergence of cascading dynamics in interacting tipping elements of ecology and climate. Royal Society Open Science, 2020, 7, 200599.	2.4	37
46	Detecting impacts of extreme events with ecological inÂsitu monitoring networks. Biogeosciences, 2017, 14, 4255-4277.	3.3	35
47	Mapping and discrimination of networks in the complexity-entropy plane. Physical Review E, 2017, 96, 042304.	2.1	32
48	Matching scope, purpose and uses of planetary boundaries science. Environmental Research Letters, 2019, 14, 073005.	5.2	32
49	Earth system modeling with endogenous and dynamic human societies: the copan:CORE open Worldâ€“Earth modeling framework. Earth System Dynamics, 2020, 11, 395-413.	7.1	32
50	When optimization for governing human-environment tipping elements is neither sustainable nor safe. Nature Communications, 2018, 9, 2354.	12.8	31
51	Deterministic limit of temporal difference reinforcement learning for stochastic games. Physical Review E, 2019, 99, 043305.	2.1	31
52	Information Visualization in Climate Research. , 2011, , .		30
53	Topology of sustainable management of dynamical systems with desirable states: from defining planetary boundaries to safe operating spaces in the Earth system. Earth System Dynamics, 2016, 7, 21-50.	7.1	30
54	Spatial network surrogates for disentangling complex system structure from spatial embedding of nodes. Physical Review E, 2016, 93, 042308.	2.1	30

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55	The technosphere in Earth System analysis: A coevolutionary perspective. Infrastructure Asset Management, 2017, 4, 23-33.	1.6	30
56	Macroscopic description of complex adaptive networks coevolving with dynamic node states. Physical Review E, 2015, 91, 052801.	2.1	29
57	Complex networks for climate model evaluation with application to statistical versus dynamical modeling of South American climate. Climate Dynamics, 2015, 44, 1567-1581.	3.8	28
58	Sustainable use of renewable resources in a stylized socialâ€“ecological network model under heterogeneous resource distribution. Earth System Dynamics, 2017, 8, 255-264.	7.1	28
59	Can Intensification of Cattle Ranching Reduce Deforestation in the Amazon? Insights From an Agent-based Social-Ecological Model. Ecological Economics, 2019, 159, 198-211.	5.7	28
60	Ten new insights in climate science 2021: a horizon scan. Global Sustainability, 2021, 4, .	3.3	26
61	Dynamics of tipping cascades on complex networks. Physical Review E, 2020, 101, 042311.	2.1	24
62	Review: visual analytics of climate networks. Nonlinear Processes in Geophysics, 2015, 22, 545-570.	1.3	23
63	A network-based microfoundation of Granovetterâ€™s threshold model for social tipping. Scientific Reports, 2020, 10, 11202.	3.3	23
64	Zealotry effects on opinion dynamics in the adaptive voter model. Physical Review E, 2017, 96, 052315.	2.1	22
65	Collateral transgression of planetary boundaries due to climate engineering by terrestrial carbon dioxide removal. Earth System Dynamics, 2016, 7, 783-796.	7.1	21
66	Constrained basin stability for studying transient phenomena in dynamical systems. Physical Review E, 2016, 93, 042205.	2.1	20
67	What do we mean, â€˜tipping cascadeâ€™?. Environmental Research Letters, 2021, 16, 125011.	5.2	19
68	Hierarchical structures in Northern Hemispheric extratropical winter oceanâ€“atmosphere interactions. International Journal of Climatology, 2017, 37, 3821-3836.	3.5	18
69	How motifs condition critical thresholds for tipping cascades in complex networks: Linking micro- to macro-scales. Chaos, 2020, 30, 043129.	2.5	18
70	Complex Network Techniques for Climatological Data Analysis. , 2016, , 159-183.		16
71	A matrix clustering method to explore patterns of land-cover transitions in satellite-derived maps of the Brazilian Amazon. Nonlinear Processes in Geophysics, 2017, 24, 113-123.	1.3	15
72	Deep reinforcement learning in World-Earth system models to discover sustainable management strategies. Chaos, 2019, 29, 123122.	2.5	15

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73	Taxonomies for structuring models for Worldâ€“Earth systems analysis of the Anthropocene: subsystems, their interactions and socialâ€“ecological feedback loops. Earth System Dynamics, 2021, 12, 1115-1137.	7.1	15
74	Clustered marginalization of minorities during social transitions induced by co-evolution of behaviour and network structure. Scientific Reports, 2016, 6, 30790.	3.3	14
75	Temporal organization of magnetospheric fluctuations unveiled by recurrence patterns in the Dst index. Chaos, 2018, 28, 085716.	2.5	14
76	The physics of governance networks: critical transitions in contagion dynamics on multilayer adaptive networks with application to the sustainable use of renewable resources. European Physical Journal: Special Topics, 2019, 228, 2357-2369.	2.6	14
77	Basin stability and limit cycles in a conceptual model for climate tipping cascades. New Journal of Physics, 2020, 22, 123031.	2.9	13
78	The microdynamics of spatial polarization: A model and an application to survey data from Ukraine. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	13
79	Potential feedbacks between loss of biosphere integrity and climate change. Global Sustainability, 2019, 2, .	3.3	11
80	Grounding Social Foundations for Integrated Assessment Models of Climate Change. Earth's Future, 2020, 8, e2020EF001573.	6.3	11
81	From Math to Metaphors and Back Again: Social-Ecological Resilience from a Multi-Agent-Environment Perspective. Gaia, 2017, 26, 182-190.	0.7	10
82	Differential Imprints of Distinct ENSO Flavors in Global Patterns of Very Low and High Seasonal Precipitation. Frontiers in Climate, 2021, 3, .	2.8	10
83	Nonlinear time series analysis of palaeoclimate proxy records. Quaternary Science Reviews, 2021, 274, 107245.	3.0	10
84	Analytically tractable climateâ€“carbon cycle feedbacks under 21st century anthropogenic forcing. Earth System Dynamics, 2018, 9, 507-523.	7.1	9
85	Global terrestrial water storage connectivity revealed using complex climate network analyses. Nonlinear Processes in Geophysics, 2015, 22, 433-446.	1.3	8
86	Complex Network Analysis of Recurrences. Understanding Complex Systems, 2015, , 101-163.	0.6	8
87	Edge anisotropy and the geometric perspective on flow networks. Chaos, 2017, 27, 035802.	2.5	8
88	Reply to Smith et al.: Social tipping dynamics in a world constrained by conflicting interests. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 10631-10632.	7.1	8
89	Modelling nonlinear dynamics of interacting tipping elements on complex networks: the PyCascades package. European Physical Journal: Special Topics, 2021, 230, 3163-3176.	2.6	8
90	Testing time series irreversibility using complex network methods. Europhysics Letters, 2013, 102, 29902.	2.0	6

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91	A Thought Experiment on Sustainable Management of the Earth System. Sustainability, 2018, 10, 1947.	3.2	6
92	Local Difference Measures between Complex Networks for Dynamical System Model Evaluation. PLoS ONE, 2015, 10, e0118088.	2.5	6
93	A modelerâ€™s guide to studying the resilience of social-technical-environmental systems. Environmental Research Letters, 2022, 17, 055005.	5.2	6
94	A perturbation-theoretic approach to Lagrangian flow networks. Chaos, 2017, 27, 035813.	2.5	5
95	Detecting contagious spreading of urban innovations on the global city network. European Physical Journal: Special Topics, 0, , 1.	2.6	3
96	Doseâ€“response functions and surrogate models for exploring social contagion in the Copenhagen Networks Study. European Physical Journal: Special Topics, 2021, 230, 1-24.	2.6	2
97	Detection of coupling directions with intersystem recurrence networks. IEICE Proceeding Series, 2014, 1, 231-234.	0.0	1
98	Publisher's Note: Disentangling different types of El NiÃ±o episodes by evolving climate network analysis [Phys. Rev. E88, 052807 (2013)]. Physical Review E, 2014, 89, .	2.1	0
99	Complex networks of interacting stochastic tipping elements: Cooperativity of phase separation in the large-system limit. Physical Review E, 2021, 104, 044301.	2.1	0
100	Identifying nonlinearities by time-reversal asymmetry of vertex properties in visibility graphs. IEICE Proceeding Series, 2014, 1, 435-438.	0.0	0