Axel Hutt

List of Publications by Year
in descending order

111 papers	1,989 citations	279487 23 h-index	301761 39 g-index
114 all docs	114 docs citations	114 times ranked	1449 citing authors

#	Article	IF	Citations
1	Shaping Intrinsic Neural Oscillations with Periodic Stimulation. Journal of Neuroscience, 2016, 36, 5328-5337.	1.7	131
2	Additive noise-induced Turing transitions in spatial systems with application to neural fields and the Swiftâ€“Hohenberg equation. Physica D: Nonlinear Phenomena, 2008, 237, 755-773.	1.3	103
3	Analysis of nonlocal neural fields for both general and gamma-distributed connectivities. Physica D: Nonlinear Phenomena, 2005, 203, 30-54.	1.3	101
4	Neural Fields with Distributed Transmission Speeds and Longâ€Range Feedback Delays. SIAM Journal on Applied Dynamical Systems, 2006, 5, 670-698.	0.7	99
5	Stability and Bifurcations in Neural Fields with Finite Propagation Speed and General Connectivity. SIAM Journal on Applied Mathematics, 2004, 65, 644-666.	0.8	94
6	Awake vs. anesthetized: layer-specific sensory processing in visual cortex and functional connectivity between cortical areas. Journal of Neurophysiology, 2015, 113, 3798-3815.	0.9	74
7	Anesthesia differentially modulates spontaneous network dynamics by cortical area and layer. Journal of Neurophysiology, 2013, 110, 2739-2751.	0.9	72
8	Pattern formation in intracortical neuronal fields. , 0, .		70
9	Effects of the anesthetic agent propofol on neural populations. Cognitive Neurodynamics, 2010, 4, 37-59.	2.3	67
10	Pattern formation in intracortical neuronal fields. Network: Computation in Neural Systems, 2003, 14, 351-368.	2.2	65
11	Breakdown of local information processing may underlie isoflurane anesthesia effects. PLoS Computational Biology, 2017, 13, e1005511.	1.5	52
12	Stimulus Statistics Shape Oscillations in Nonlinear Recurrent Neural Networks. Journal of Neuroscience, 2015, 35, 2895-2903.	1.7	46
13	Additive Global Noise Delays Turing Bifurcations. Physical Review Letters, 2007, 98, 230601.	2.9	43
14	Stochastic resonance mediates the state-dependent effect of periodic stimulation on cortical alpha oscillations. ELife, 2017, 6, .	2.8	41
15	The anesthetic propofol shifts the frequency of maximum spectral power in EEG during general anesthesia: analytical insights from a linear model. Frontiers in Computational Neuroscience, 2013, 7, 2.	1.2	39
16	Dynamic Control of Synchronous Activity in Networks of Spiking Neurons. PLoS ONE, 2016, 11, e0161488.	1.1	37
17	Detecting Recurrence Domains of Dynamical Systems by Symbolic Dynamics. Physical Review Letters, 2013, 110, 154101.	2.9	36
18	Additive noise may change the stability of nonlinear systems. Europhysics Letters, 2008, 84, 34003.	0.7	35

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19	Suppression of underlying neuronal fluctuations mediates EEG slowing during general anaesthesia. NeuroImage, 2018, 179, 414-428.	2.1	35
20	Activity spread and breathers induced by finite transmission speeds in two-dimensional neural fields. Physical Review E, 2010, 82, 055701.	0.8	33
21	Effects of distributed transmission speeds on propagating activity in neural populations. Physical Review E, 2006, 73, 021906.	0.8	32
22	Study of GABAergic extra-synaptic tonic inhibition in single neurons and neural populations by traversing neural scales: application to propofol-induced anaesthesia. Journal of Computational Neuroscience, 2014, 37, 417-437.	0.6	32
23	How the cortico-thalamic feedback affects the EEG power spectrum over frontal and occipital regions during propofol-induced sedation. Journal of Computational Neuroscience, 2015, 39, 155-179.	0.6	27
24	Analysis and modeling of quasi-stationary multivariate time series and their application to middle latency auditory evoked potentials. Physica D: Nonlinear Phenomena, 2003, 177, 203-232.	1.3	25
25	Local excitation-lateral inhibition interaction yields oscillatory instabilities in nonlocally interacting systems involving finite propagation delay. Physics Letters, Section A: General, Atomic and Solid State Physics, 2008, 372, 541-546.	0.9	25
26	Generalization of the reaction-diffusion, Swift-Hohenberg, and Kuramoto-Sivashinsky equations and effects of finite propagation speeds. Physical Review E, 2007, 75, 026214.	0.8	24
27	Digital Addiction and Sleep. International Journal of Environmental Research and Public Health, 2022, 19, 6910.	1.2	24
28	Optimal Model Parameter Estimation from EEG Power Spectrum Features Observed during General Anesthesia. Neuroinformatics, 2018, 16, 231-251.	1.5	23
29	Pattern formation in intracortical neuronal fields. Network: Computation in Neural Systems, 2003, 14, 351-68.	2.2	23
30	Wave fronts in inhomogeneous neural field models. Physica D: Nonlinear Phenomena, 2009, 238, 1101-1112.	1.3	22
31	Anesthetic action on extra-synaptic receptors: effects in neural population models of EEG activity. Frontiers in Systems Neuroscience, 2014, 8, 232.	1.2	22
32	A Review of the Use of Geostationary Satellite Observations in Regional-Scale Models for Short-term Cloud Forecasting. Meteorologische Zeitschrift, 2018, 27, 277-298.	0.5	22
33	Spontaneous and evoked activity in extended neural populations with gamma-distributed spatial interactions and transmission delay. Chaos, Solitons and Fractals, 2007, 32, 547-560.	2.5	21
34	Anesthetic action on the transmission delay between cortex and thalamus explains the beta-buzz observed under propofol anesthesia. PLoS ONE, 2017, 12, e0179286.	1.1	19
35	Optimal estimation of recurrence structures from time series. Europhysics Letters, 2016, 114, 38003.	0.7	18
36	Neurostimulation stabilizes spiking neural networks by disrupting seizure-like oscillatory transitions. Scientific Reports, 2020, 10, 15408.	1.6	18

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37	Detecting event-related recurrences by symbolic analysis: applications to human language processing. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140089.	1.6	16
38	Effect of Stimulation Waveform on the Non-linear Entrainment of Cortical Alpha Oscillations. Frontiers in Neuroscience, 2018, 12, 376.	1.4	16
39	Detection of fixed points in spatiotemporal signals by a clustering method. Physical Review E, 2000, 61, R4691-R4693.	0.8	15
40	Sequences by Metastable Attractors: Interweaving Dynamical Systems and Experimental Data. Frontiers in Applied Mathematics and Statistics, 2017, 3, .	0.7	15
41	Driving neural oscillations with correlated spatial input and topographic feedback. Physical Review E, 2008, 78, 021911.	0.8	14
42	Kernel Reconstruction for Delayed Neural Field Equations. Journal of Mathematical Neuroscience, 2018, 8, 3.	2.4	14
43	Assimilating Visible and Infrared Radiances in Idealized Simulations of Deep Convection. Monthly Weather Review, 2020, 148, 4357-4375.	0.5	13
44	Critical Fluctuations and 1/fÎ±-Activity of Neural Fields Involving Transmission Delays. Acta Physica Polonica A, 2005, 108, 1021-1040.	0.2	13
45	The population firing rate in the presence of GABAergic tonic inhibition in single neurons and application to general anaesthesia. Cognitive Neurodynamics, 2012, 6, 227-237.	2.3	12
46	Additive noise quenches delay-induced oscillations. Europhysics Letters, 2013, 102, 60003.	0.7	12
47	The time course of temporal attention effects on nonconscious prime processing. Attention, Perception, and Psychophysics, 2013, 75, 1667-1686.	0.7	12
48	Phase Coherence Induced by Additive Gaussian and Non-gaussian Noise in Excitable Networks With Application to Burst Suppression-Like Brain Signals. Frontiers in Applied Mathematics and Statistics, 2020, 5, .	0.7	12
49	Delay stabilizes stochastic systems near a non-oscillatory instability. Europhysics Letters, 2012, 98, 20004.	0.7	10
50	Reduced dynamics for delayed systems with harmonic or stochastic forcing. Chaos, 2012, 22, 043121.	1.0	10
51	AN ANALYTICAL FRAMEWORK FOR MODELING EVOKED AND EVENT-RELATED POTENTIALS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2004, 14, 653-666.	0.7	9
52	Anesthetic-Induced Transitions by Propofol Modeled by Nonlocal Neural Populations Involving Two Neuron Types. Journal of Biological Physics, 2008, 34, 433-440.	0.7	9
53	Attractor and saddle node dynamics in heterogeneous neural fields. EPJ Nonlinear Biomedical Physics, 2014, 2, .	0.8	9
54	Analysis of spatiotemporal signals: A method based on perturbation theory. Physical Review E, 1999, 60, 1350-1358.	0.8	8

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55	Oscillatory activity in excitable neural systems. Contemporary Physics, 2010, 51, 3-16.	0.8	8
56	Sleep and Anesthesia. , 2011, , .		8
57	Distributed Nonlocal Feedback Delays May Destabilize Fronts in Neural Fields, Distributed Transmission Delays Do Not. Journal of Mathematical Neuroscience, 2013, 3, 9.	2.4	8
58	Neural field simulator: two-dimensional spatio-temporal dynamics involving finite transmission speed. Frontiers in Neuroinformatics, 2015, 9, 25.	1.3	8
59	Arousal Fluctuations Govern Oscillatory Transitions Between Dominant $$gamma$$ and $$alpha$$ Occipital Activity During Eyes Open/Closed Conditions. Brain Topography, 2022, 35, 108-120.	0.8	8
60	Synchronous and asynchronous evaluation of dynamic neural fields. Journal of Difference Equations and Applications, 2011, 17, 1119-1133.	0.7	7
61	Assimilation of SEVIRI Water Vapor Channels With an Ensemble Kalman Filter on the Convective Scale. Frontiers in Earth Science, 2020, 8, .	0.8	7
62	Metastable dynamics in heterogeneous neural fields. Frontiers in Systems Neuroscience, 2015, 9, 97.	1.2	6
63	Statistical Frequency-Dependent Analysis of Trial-to-Trial Variability in Single Time Series by Recurrence Plots. Frontiers in Systems Neuroscience, 2016, 9, 184.	1.2	6
64	Editorial: General anesthesia: from theory to experiments. Frontiers in Systems Neuroscience, 2015, 9, 105.	1.2	5
65	Anesthesia-related changes in information transfer may be caused by reduction in local information generation. , 2015, 2015, 4045-8.		5
66	How to Render Neural Fields More Realistic. Springer Series in Computational Neuroscience, 2015, , 141-159.	0.3	5
67	Improvement of source localization by dynamical systems based modeling (DSBM). Brain Topography, 2001, 13, 219-226.	0.8	4
68	Numerical Simulation Scheme of One- and Two Dimensional Neural Fields Involving Space-Dependent Delays. , 2014, , 175-185.		4
69	Cortico-Thalamic Circuit Model for Bottom-Up and Top-Down Mechanisms in General Anesthesia Involving the Reticular Activating System. Archives of Neuroscience, 2019, 6, .	0.1	4
70	Additive Noise Tunes the Self-Organization in Complex Systems. , 2020, , 183-195.		3
71	Divergence of the Ensemble Transform Kalman Filter (LETKF) by Nonlocal Observations. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	2
72	General anaesthesia. Scholarpedia Journal, 2013, 8, 30485.	0.3	2

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73	TRAVELING WAVE SOLUTIONS OF NONLINEAR SCALAR INTEGRAL DIFFERENTIAL EQUATIONS ARISING FROM SYNAPTICALLY COUPLED NEURONAL NETWORKS. Journal of Applied Analysis and Computation, 2014, 4, 1-68.	0.2	2
74	Mathematical Model Insights into EEG Origin under Transcranial Direct Current Stimulation (tDCS) in the Context of Psychosis. Journal of Clinical Medicine, 2022, 11, 1845.	1.0	2
75	Poisson-distributed noise induces cortical Î³-activity: explanation of Î³-enhancement by anaesthetics ketamine and propofol. Journal of Physics Complexity, 2022, 3, 015002.	0.9	2
76	Asynchronous Evaluation as an Efficient and Natural Way to Compute Neural Networks. , 2009, , .		1
77	Finite Propagation Speeds in Spatially Extended Systems. Understanding Complex Systems, 2009, , 151-176.	0.3	1
78	Partial amplitude synchronization detection in brain signals using Bayesian Gaussian mixture models. Journal of Physiology (Paris), 2011, 105, 98-105.	2.1	1
79	A thalamo-cortical model to explain EEG during anaesthesia. BMC Neuroscience, 2013, 14, .	0.8	1
80	Neural field simulator: fast computation and 3D-visualization. BMC Neuroscience, 2013, 14, .	0.8	1
81	Description and removal of background activity in EEG power spectra under general anesthesia using the Lorentzian curve. BMC Neuroscience, 2015, 16, .	0.8	1
82	Forecast of Spectral Features by Ensemble Data Assimilation. Frontiers in Applied Mathematics and Statistics, 2018, 4, .	0.7	1
83	Spatiotemporal instabilities in neural fields and the effects of additive noise. , 2010, , 53-80.		1
84	A Thalamacortical Feedback Model to Explain EEG During Anesthesia. Understanding Complex Systems, 2016, , 305-312.	0.3	1
85	Time-Frequency Representations as Phase Space Reconstruction in Symbolic Recurrence Structure Analysis. Contributions To Statistics, 2017, , 89-102.	0.2	1
86	Synergetics: An Introduction. , 2020, , 1-3.		1
87	Editorial: Machine Learning in Natural Complex Systems. Frontiers in Applied Mathematics and Statistics, 2022, 8, .	0.7	1
88	Additive Noise-Induced System Evolution (ANISE). Frontiers in Applied Mathematics and Statistics, 2022, 8, .	0.7	1
89	The study of nonlocal neural populations involving two neuron types and the effect of propofol. BMC Neuroscience, 2007, 8, .	0.8	0
90	Dynamics of Neural Fields with Distributed Transmission Speeds. , 2008, , 205-212.		0

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91	External stimulation induces switches between neural oscillations: an illustrative feedback model. BMC Neuroscience, 2011, 12, .	0.8	0
92	General anaesthetics induce tonic inhibition and modulate the gain of neural populations : a modeling study. BMC Neuroscience, 2012, 13, .	0.8	0
93	Effects of tonic inhibition on a cortical neuronal population: implications for general anesthesia under propofol. BMC Neuroscience, 2013, 14, .	0.8	0
94	Two-dimensional patterns in neural fields subject to finite transmission speed. BMC Neuroscience, 2014, 15, .	0.8	0
95	Stochastic modulation of oscillatory neural activity. BMC Neuroscience, 2014, 15, .	0.8	0
96	Bursting suppression in propofol-induced general anesthesia as bi-stability in a non-linear neural mass model. BMC Neuroscience, 2014, 15, .	0.8	0
97	Reproduction of EEG power spectrum over frontal region during the propofol-induced general anesthesia. BMC Neuroscience, 2014, 15, .	0.8	0
98	Dynamics analysis of neural univariate time series by recurrence plots. BMC Neuroscience, 2015, 16, .	0.8	0
99	Thalamo-cortical mechanisms of the observed specific changes in frontal and occipital EEG rhythms during propofol-induce sedation. BMC Neuroscience, 2015, 16, .	0.8	0
100	Editorial: Data Assimilation and Control: Theory and Applications in Life Sciences. Frontiers in Applied Mathematics and Statistics, 2019, 5, .	0.7	0
101	Editorial: Recurrence Analysis of Complex Systems Dynamics. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	0
102	Detection of Phase Synchronization in Multivariate Single Brain Signals by a Clustering Approach. , 2009, , 149-164.		0
103	Neural Field Model, Continuum. , 2013, , 1-10.		0
104	Neural Field Model, Continuum. , 2015, , 1888-1895.		0
105	Pattern Formation in Neural Population Models. , 2015, , 2230-2236.		0
106	Periodic External Input Tunes the Stability of Delayed Nonlinear Systems: From the Slaving Principle to Center Manifolds. Understanding Complex Systems, 2016, , 8-24.	0.3	0
107	General Anesthesia: From Theory to Experiments. Frontiers Research Topics, 0, , .	0.2	0
108	Additive Noise Tunes the Self-Organization in Complex Systems. , 2018, , 1-14.		0

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109	Brain Connectivity Reduction Reflects Disturbed Self-Organisation of the Brain: Neural Disorders and General Anaesthesia. Springer Series in Cognitive and Neural Systems, 2019, , 207-218.	0.1	0
110	Neural Field Model, Continuum. , 2022, , 2225-2233.		0
111	Pattern Formation in Neural Population Models. , 2022, , 2623-2628.		0