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	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
2	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
3	Editorial: Machine Learning in Natural Complex Systems. Frontiers in Applied Mathematics and Statistics, 2022, 8, .	0.7	1
4	Additive Noise-Induced System Evolution (ANISE). Frontiers in Applied Mathematics and Statistics, 2022, 8, .	0.7	1
5	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
6	Digital Addiction and Sleep. International Journal of Environmental Research and Public Health, 2022, 19, 6910.	1.2	24
7	Neural Field Model, Continuum. , 2022, , 2225-2233.		0
8	Pattern Formation in Neural Population Models. , 2022, , 2623-2628.		0
9	Neurostimulation stabilizes spiking neural networks by disrupting seizure-like oscillatory transitions. Scientific Reports, 2020, 10, 15408.	1.6	18
10	Divergence of the Ensemble Transform Kalman Filter (LETKF) by Nonlocal Observations. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	2
11	Editorial: Recurrence Analysis of Complex Systems Dynamics. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	0
12	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
13	Assimilation of SEVIRI Water Vapor Channels With an Ensemble Kalman Filter on the Convective Scale. Frontiers in Earth Science, 2020, 8, .	0.8	7
14	Assimilating Visible and Infrared Radiances in Idealized Simulations of Deep Convection. Monthly Weather Review, 2020, 148, 4357-4375.	0.5	13
15	Additive Noise Tunes the Self-Organization in Complex Systems. , 2020, , 183-195.		3
16	Synergetics: An Introduction. , 2020, , 1-3.		1
17	Editorial: Data Assimilation and Control: Theory and Applications in Life Sciences. Frontiers in Applied Mathematics and Statistics, 2019, 5, .	0.7	0
18	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

#	Article	IF	Citations
19	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
20	Optimal Model Parameter Estimation from EEG Power Spectrum Features Observed during General Anesthesia. Neuroinformatics, 2018, 16, 231-251.	1.5	23
21	Forecast of Spectral Features by Ensemble Data Assimilation. Frontiers in Applied Mathematics and Statistics, 2018, 4, .	0.7	1
22	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
23	Effect of Stimulation Waveform on the Non-linear Entrainment of Cortical Alpha Oscillations. Frontiers in Neuroscience, 2018, 12, 376.	1.4	16
24	Kernel Reconstruction for Delayed Neural Field Equations. Journal of Mathematical Neuroscience, 2018, 8, 3.	2.4	14
25	Suppression of underlying neuronal fluctuations mediates EEG slowing during general anaesthesia. NeuroImage, 2018, 179, 414-428.	2.1	35
26	Additive Noise Tunes the Self-Organization in Complex Systems. , 2018, , 1-14.		0
27	Sequences by Metastable Attractors: Interweaving Dynamical Systems and Experimental Data. Frontiers in Applied Mathematics and Statistics, 2017, 3, .	0.7	15
28	Stochastic resonance mediates the state-dependent effect of periodic stimulation on cortical alpha oscillations. ELife, 2017, 6, .	2.8	41
29	Breakdown of local information processing may underlie isoflurane anesthesia effects. PLoS Computational Biology, 2017, 13, e1005511.	1.5	52
30	Time-Frequency Representations as Phase Space Reconstruction in Symbolic Recurrence Structure Analysis. Contributions To Statistics, 2017, , 89-102.	0.2	1
31	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
32	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
33	Dynamic Control of Synchronous Activity in Networks of Spiking Neurons. PLoS ONE, 2016, 11, e0161488.	1.1	37
34	Optimal estimation of recurrence structures from time series. Europhysics Letters, 2016, 114, 38003.	0.7	18
35	Shaping Intrinsic Neural Oscillations with Periodic Stimulation. Journal of Neuroscience, 2016, 36, 5328-5337.	1.7	131
36	A Thalamacortical Feedback Model to Explain EEG During Anesthesia. Understanding Complex Systems, 2016, , 305-312.	0.3	1

#	Article	IF	Citations
37	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
38	Dynamics analysis of neural univariate time series by recurrence plots. BMC Neuroscience, 2015, 16, .	0.8	0
39	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
40	Description and removal of background activity in EEG power spectra under general anesthesia using the Lorentzian curve. BMC Neuroscience, 2015, 16, .	0.8	1
41	Neural field simulator: two-dimensional spatio-temporal dynamics involving finite transmission speed. Frontiers in Neuroinformatics, 2015, 9, 25.	1.3	8
42	Metastable dynamics in heterogeneous neural fields. Frontiers in Systems Neuroscience, 2015, 9, 97.	1.2	6
43	Editorial: General anesthesia: from theory to experiments. Frontiers in Systems Neuroscience, 2015, 9, 105.	1.2	5
44	Anesthesia-related changes in information transfer may be caused by reduction in local information generation. , 2015, 2015, 4045-8.		5
45	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
46	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
47	Stimulus Statistics Shape Oscillations in Nonlinear Recurrent Neural Networks. Journal of Neuroscience, 2015, 35, 2895-2903.	1.7	46
48	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
49	How to Render Neural Fields More Realistic. Springer Series in Computational Neuroscience, 2015, , 141-159.	0.3	5
50	Neural Field Model, Continuum. , 2015, , 1888-1895.		0
51	Pattern Formation in Neural Population Models. , 2015, , 2230-2236.		0
52	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
53	Attractor and saddle node dynamics in heterogeneous neural fields. EPJ Nonlinear Biomedical Physics, 2014, 2, .	0.8	9
54	Two-dimensional patterns in neural fields subject to finite transmission speed. BMC Neuroscience, 2014, 15, .	0.8	0

#	Article	IF	Citations
55	Stochastic modulation of oscillatory neural activity. BMC Neuroscience, 2014, 15, .	0.8	0
56	Bursting suppression in propofol-induced general anesthesia as bi-stability in a non-linear neural mass model. BMC Neuroscience, 2014, 15, .	0.8	0
57	Reproduction of EEG power spectrum over frontal region during the propofol-induced general anesthesia. BMC Neuroscience, 2014, 15, .	0.8	0
58	Anesthetic action on extra-synaptic receptors: effects in neural population models of EEG activity. Frontiers in Systems Neuroscience, 2014, 8, 232.	1.2	22
59	Numerical Simulation Scheme of One- and Two Dimensional Neural Fields Involving Space-Dependent Delays. , 2014, , 175-185.		4
60	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
61	Additive noise quenches delay-induced oscillations. Europhysics Letters, 2013, 102, 60003.	0.7	12
62	A thalamo-cortical model to explain EEG during anaesthesia. BMC Neuroscience, 2013, 14, .	0.8	1
63	Neural field simulator: fast computation and 3D-visualization. BMC Neuroscience, 2013, 14, .	0.8	1
64	Effects of tonic inhibition on a cortical neuronal population: implications for general anesthesia under propofol. BMC Neuroscience, 2013, 14, .	0.8	0
65	Detecting Recurrence Domains of Dynamical Systems by Symbolic Dynamics. Physical Review Letters, 2013, 110, 154101.	2.9	36
66	The time course of temporal attention effects on nonconscious prime processing. Attention, Perception, and Psychophysics, 2013, 75, 1667-1686.	0.7	12
67	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
68	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
69	Anesthesia differentially modulates spontaneous network dynamics by cortical area and layer. Journal of Neurophysiology, 2013, 110, 2739-2751.	0.9	72
70	General anaesthesia. Scholarpedia Journal, 2013, 8, 30485.	0.3	2
71	Neural Field Model, Continuum. , 2013, , 1-10.		0
72	Delay stabilizes stochastic systems near a non-oscillatory instability. Europhysics Letters, 2012, 98, 20004.	0.7	10

#	Article	IF	Citations
73	Reduced dynamics for delayed systems with harmonic or stochastic forcing. Chaos, 2012, 22, 043121.	1.0	10
74	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
75	General anaesthetics induce tonic inhibition and modulate the gain of neural populations : a modeling study. BMC Neuroscience, 2012, 13, .	0.8	0
76	Synchronous and asynchronous evaluation of dynamic neural fields. Journal of Difference Equations and Applications, 2011, 17, 1119-1133.	0.7	7
77	Sleep and Anesthesia. , 2011, , .		8
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	External stimulation induces switches between neural oscillations: an illustrative feedback model. BMC Neuroscience, 2011, 12, .	0.8	0
80	Effects of the anesthetic agent propofol on neural populations. Cognitive Neurodynamics, 2010, 4, 37-59.	2.3	67
81	Oscillatory activity in excitable neural systems. Contemporary Physics, 2010, 51, 3-16.	0.8	8
82	Activity spread and breathers induced by finite transmission speeds in two-dimensional neural fields. Physical Review E, 2010, 82, 055701.	0.8	33
83	Spatiotemporal instabilities in neural fields and the effects of additive noise. , 2010, , 53-80.		1
84	Asynchronous Evaluation as an Efficient and Natural Way to Compute Neural Networks. , 2009, , .		1
85	Wave fronts in inhomogeneous neural field models. Physica D: Nonlinear Phenomena, 2009, 238, 1101-1112.	1.3	22
86	Finite Propagation Speeds in Spatially Extended Systems. Understanding Complex Systems, 2009, , 151-176.	0.3	1
87	Detection of Phase Synchronization in Multivariate Single Brain Signals by a Clustering Approach. , 2009, , 149-164.		0
88	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
89	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
90	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

#	Article	IF	Citations
91	Dynamics of Neural Fields with Distributed Transmission Speeds. , 2008, , 205-212.		0
92	Additive noise may change the stability of nonlinear systems. Europhysics Letters, 2008, 84, 34003.	0.7	35
93	Driving neural oscillations with correlated spatial input and topographic feedback. Physical Review E, 2008, 78, 021911.	0.8	14
94	Additive Global Noise Delays Turing Bifurcations. Physical Review Letters, 2007, 98, 230601.	2.9	43
95	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
96	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
97	The study of nonlocal neural populations involving two neuron types and the effect of propofol. BMC Neuroscience, 2007, 8, .	0.8	0
98	Neural Fields with Distributed Transmission Speeds and Longâ€Range Feedback Delays. SIAM Journal on Applied Dynamical Systems, 2006, 5, 670-698.	0.7	99
99	Effects of distributed transmission speeds on propagating activity in neural populations. Physical Review E, 2006, 73, 021906.	0.8	32
100	Analysis of nonlocal neural fields for both general and gamma-distributed connectivities. Physica D: Nonlinear Phenomena, 2005, 203, 30-54.	1.3	101
101	Critical Fluctuations and 1/fÎ±-Activity of Neural Fields Involving Transmission Delays. Acta Physica Polonica A, 2005, 108, 1021-1040.	0.2	13
102	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
103	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
104	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
105	Pattern formation in intracortical neuronal fields. Network: Computation in Neural Systems, 2003, 14, 351-368.	2.2	65
106	Pattern formation in intracortical neuronal fields. Network: Computation in Neural Systems, 2003, 14, 351-68.	2.2	23
107	Improvement of source localization by dynamical systems based modeling (DSBM). Brain Topography, 2001, 13, 219-226.	0.8	4
108	Detection of fixed points in spatiotemporal signals by a clustering method. Physical Review E, 2000, 61, R4691-R4693.	0.8	15

#	Article	IF	Citations
109	Analysis of spatiotemporal signals: A method based on perturbation theory. Physical Review E, 1999, 60, 1350-1358.	0.8	8
110	Pattern formation in intracortical neuronal fields. , 0, .		70
111	General Anesthesia: From Theory to Experiments. Frontiers Research Topics, 0, , .	0.2	0