Dietmar Plenz

List of Publications by Year
in descending order

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81	10,332	66234	71532
papers	citations	42 h-index	76 g-index

102	102	102	6419
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Neuronal Avalanches. , 2022, , 2361-2368.		0
2	Long-term stability of avalanche scaling and integrative network organization in prefrontal and premotor cortex. Network Neuroscience, 2021, 5, 1-22.	1.4	4
3	Self-Organized Criticality in the Brain. Frontiers in Physics, 2021, 9, .	1.0	61
4	Box scaling as a proxy of finite size correlations. Scientific Reports, 2021, 11, 15937.	1.6	11
5	Controlling a complex system near its critical point via temporal correlations. Scientific Reports, 2020, 10, 12145.	1.6	23
6	Stability of neuronal avalanches and long-range temporal correlations during the first year of life in human infants. Brain Structure and Function, 2020, 225, 1169-1183.	1.2	20
7	Scale-Free Dynamics in Animal Groups and Brain Networks. Frontiers in Systems Neuroscience, 2020, 14, 591210.	1.2	12
8	Selective Participation of Single Cortical Neurons in Neuronal Avalanches. Frontiers in Neural Circuits, 2020, 14, 620052.	1.4	11
9	Neuronal Avalanches in Input and Associative Layers of Auditory Cortex. Frontiers in Systems Neuroscience, 2019, 13, 45.	1.2	22
10	The scale-invariant, temporal profile of neuronal avalanches in relation to cortical Î³â€“oscillations. Scientific Reports, 2019, 9, 16403.	1.6	44
11	Brain active transmembrane water cycling measured by MR isÂassociated with neuronal activity. Magnetic Resonance in Medicine, 2019, 81, 1280-1295.	1.9	21
12	Altered avalanche dynamics in a developmental NMDAR hypofunction model of cognitive impairment. Translational Psychiatry, 2018, 8, 3.	2.4	32
13	Fast, Na⁺/K⁺ pump driven, steadyâ€state transcytolemmal water exchange in neuronal tissue: A study of rat brain cortical cultures. Magnetic Resonance in Medicine, 2018, 79, 3207-3217.	1.9	47
14	Neuronal Avalanches. , 2018, , 1-8.		0
15	The Interplay between Long- and Short-Range Temporal Correlations Shapes Cortex Dynamics across Vigilance States. Journal of Neuroscience, 2017, 37, 10114-10124.	1.7	39
16	Decline of long-range temporal correlations in the human brain during sustained wakefulness. Scientific Reports, 2017, 7, 11825.	1.6	53
17	Neutral Theory and Scale-Free Neural Dynamics. Physical Review X, 2017, 7, .	2.8	53
18	Maintained avalanche dynamics during task-induced changes of neuronal activity in nonhuman primates. ELife, 2017, 6, .	2.8	62

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19	Assessing the sensitivity of diffusion MRI to detect neuronal activity directly. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E1728-37.	3.3	35
20	Quantifying antiepileptic drug effects using intrinsic excitability measures. Epilepsia, 2016, 57, e210-e215.	2.6	28
21	A Low-Correlation Resting State of the Striatum during Cortical Avalanches and Its Role in Movement Suppression. PLoS Biology, 2016, 14, e1002582.	2.6	19
22	Simultaneous calcium fluorescence imaging and MR ofex vivoorganotypic cortical cultures: a new test bed for functional MRI. NMR in Biomedicine, 2015, 28, 1726-1738.	1.6	17
23	Criticality as a signature of healthy neural systems. Frontiers in Systems Neuroscience, 2015, 9, 22.	1.2	93
24	Synaptic Plasticity Enables Adaptive Self-Tuning Critical Networks. PLoS Computational Biology, 2015, 11, e1004043.	1.5	57
25	Intrinsic excitability measures track antiepileptic drug action and uncover increasing/decreasing excitability over the wake/sleep cycle. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 14694-14699.	3.3	105
26	Opening bottlenecks on weighted networks by local adaptation to cascade failures. Journal of Complex Networks, 2015, 3, 552-565.	1.1	8
27	Critical Slowing Down Governs the Transition to Neuron Spiking. PLoS Computational Biology, 2015, 11, e1004097.	1.5	53
28	Mapping of Cortical Avalanches to the Striatum. Advances in Cognitive Neurodynamics, 2015, , 291-297.	0.1	3
29	Irregular spiking of pyramidal neurons organizes as scale-invariant neuronal avalanches in the awake state. ELife, 2015, 4, e07224.	2.8	131
30	powerlaw: A Python Package for Analysis of Heavy-Tailed Distributions. PLoS ONE, 2014, 9, e85777.	1.1	627
31	Scale-Invariant Neuronal Avalanche Dynamics and the Cut-Off in Size Distributions. PLoS ONE, 2014, 9, e99761.	1.1	52
32	On the temporal organization of neuronal avalanches. Frontiers in Systems Neuroscience, 2014, 8, 204.	1.2	47
33	Impact of inhibition in striatal decorrelation of cortical neuronal avalanches. BMC Neuroscience, 2013, 14, .	0.8	0
34	Neuronal Avalanches in the Resting MEG of the Human Brain. Journal of Neuroscience, 2013, 33, 7079-7090.	1.7	270
35	The Functional Benefits of Criticality in the Cortex. Neuroscientist, 2013, 19, 88-100.	2.6	403
36	Universal organization of resting brain activity at the thermodynamic critical point. Frontiers in Systems Neuroscience, 2013, 7, 42.	1.2	49

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37	Maximal Variability of Phase Synchrony in Cortical Networks with Neuronal Avalanches. Journal of Neuroscience, 2012, 32, 1061-1072.	1.7	180
38	Balance between Excitation and Inhibition Controls the Temporal Organization of Neuronal Avalanches. Physical Review Letters, 2012, 108, 228703.	2.9	113
39	Neuronal avalanches and coherence potentials. European Physical Journal: Special Topics, 2012, 205, 259-301.	1.2	67
40	The organization of strong links in complexÂnetworks. Nature Physics, 2012, 8, 429-436.	6.5	57
41	Neuronal avalanches and the cortico-striatal network. BMC Neuroscience, 2012, 13, .	0.8	4
42	Higher-Order Interactions Characterized in Cortical Activity. Journal of Neuroscience, 2011, 31, 17514-17526.	1.7	181
43	Multi-electrode Array Recordings of Neuronal Avalanches in Organotypic Cultures. Journal of Visualized Experiments, 2011, , .	0.2	19
44	Information Capacity and Transmission Are Maximized in Balanced Cortical Networks with Neuronal Avalanches. Journal of Neuroscience, 2011, 31, 55-63.	1.7	479
45	Statistical Analyses Support Power Law Distributions Found in Neuronal Avalanches. PLoS ONE, 2011, 6, e19779.	1.1	197
46	Simultaneous multi-electrode array recording and two-photon calcium imaging of neural activity. Journal of Neuroscience Methods, 2010, 192, 75-82.	1.3	43
47	A leak-proof model. Nature Physics, 2010, 6, 717-718.	6.5	2
48	Angiogenic Factors Stimulate Growth of Adult Neural Stem Cells. PLoS ONE, 2010, 5, e9414.	1.1	52
49	Hierarchical Interaction Structure of Neural Activities in Cortical Slice Cultures. Journal of Neuroscience, 2010, 30, 8720-8733.	1.7	25
50	Coherence Potentials: Loss-Less, All-or-None Network Events in the Cortex. PLoS Biology, 2010, 8, e1000278.	2.6	40
51	Neuronal Avalanches in Spontaneous Activity In Vivo. Journal of Neurophysiology, 2010, 104, 3312-3322.	0.9	170
52	The Striatal Skeleton. Handbook of Behavioral Neuroscience, 2010, , 99-112.	0.7	4
53	Spontaneous cortical activity in awake monkeys composed of neuronal avalanches. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 15921-15926.	3.3	469
54	Efficient Network Reconstruction from Dynamical Cascades Identifies Small-World Topology of Neuronal Avalanches. PLoS Computational Biology, 2009, 5, e1000271.	1.5	95

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55	Neuronal Avalanches Imply Maximum Dynamic Range in Cortical Networks at Criticality. Journal of Neuroscience, 2009, 29, 15595-15600.	1.7	495
56	Homeostasis of neuronal avalanches during postnatal cortex development in vitro. Journal of Neuroscience Methods, 2008, 169, 405-416.	1.3	66
57	Neuronal avalanches organize as nested theta- and beta/gamma-oscillations during development of cortical layer 2/3. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 7576-7581.	3.3	299
58	The organizing principles of neuronal avalanches: cell assemblies in the cortex?. Trends in Neurosciences, 2007, 30, 101-110.	4.2	350
59	Fine spatio-temporal interactions in multielectrode LFP signals. Neuroscience Research, 2007, 58, S185.	1.0	0
60	Inverted-U Profile of Dopamine-NMDA-Mediated Spontaneous Avalanche Recurrence in Superficial Layers of Rat Prefrontal Cortex. Journal of Neuroscience, 2006, 26, 8148-8159.	1.7	122
61	A Comparative Voltage and Current-Clamp Analysis of Feedback and Feedforward Synaptic Transmission in the Striatal Microcircuit In Vitro. Journal of Neurophysiology, 2006, 95, 737-752.	0.9	78
62	Using Potassium Currents to Solve Signal-to-Noise Problems in Inhibitory Feedforward Networks of the Striatum. Journal of Neurophysiology, 2006, 95, 331-341.	0.9	20
63	Direct magnetic resonance detection of neuronal electrical activity. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 16015-16020.	3.3	92
64	The role of background synaptic noise in striatal fast spiking interneurons. Neurocomputing, 2005, 65-66, 727-732.	3.5	1
65	Comment on â€œCritical Branching Captures Activity in Living Neural Networks and Maximizes the Number of Metastable Statesâ€• Physical Review Letters, 2005, 95, 219801; author reply 219802.	2.9	6
66	Action Potential Timing Determines Dendritic Calcium during Striatal Up-States. Journal of Neuroscience, 2004, 24, 877-885.	1.7	65
67	Neuronal Avalanches Are Diverse and Precise Activity Patterns That Are Stable for Many Hours in Cortical Slice Cultures. Journal of Neuroscience, 2004, 24, 5216-5229.	1.7	521
68	When inhibition goes incognito: feedback interaction between spiny projection neurons in striatal function. Trends in Neurosciences, 2003, 26, 436-443.	4.2	203
69	Quantitative Estimate of Synaptic Inputs to Striatal Neurons during Up and Down StatesIn Vitro. Journal of Neuroscience, 2003, 23, 9123-9132.	1.7	62
70	Neuronal Avalanches in Neocortical Circuits. Journal of Neuroscience, 2003, 23, 11167-11177.	1.7	1,757
71	Nonlinear partial differential equations and applications: Fast synaptic transmission between striatal spiny projection neurons. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 15764-15769.	3.3	167
72	Preparation and Maintenance of Organotypic Cultures for Multiâ€Electrode Array Recordings. Current Protocols in Neuroscience, 2002, 19, Unit 6.15.	2.6	11

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73	Dendritic Calcium Encodes Striatal Neuron Output during Up-States. Journal of Neuroscience, 2002, 22, 1499-1512.	1.7	74
74	A basal ganglia pacemaker formed by the subthalamic nucleus and external globus pallidus. Nature, 1999, 400, 677-682.	13.7	668
75	Morphological organization of the globus pallidus-subthalamic nucleus system studied in organotypic cultures. , 1998, 397, 437-457.		27
76	Up and Down States in Striatal Medium Spiny Neurons Simultaneously Recorded with Spontaneous Activity in Fast-Spiking Interneurons Studied in Cortexâ€“Striatumâ€“Substantia Nigra Organotypic Cultures. Journal of Neuroscience, 1998, 18, 266-283.	1.7	258
77	Regulation of the Nigrostriatal Pathway by Metabotropic Glutamate Receptors during Development. Journal of Neuroscience, 1998, 18, 4133-4144.	1.7	48
78	Organotypic cortex-striatum-mesencephalon cultures: the nigrostriatal pathway. Neuroscience Letters, 1996, 209, 177-180.	1.0	82
79	Generation of high-frequency oscillations in local circuits of rat somatosensory cortex cultures. Journal of Neurophysiology, 1996, 76, 4180-4184.	0.9	75
80	Current Source Density Profiles of Optical Recording Maps: a New Approach to the Analysis of Spatio-temporal Neural Activity Patterns. European Journal of Neuroscience, 1993, 5, 437-448.	1.2	26
81	The Critical Brain. Physics Magazine, 0, 6, .	0.1	13