

Partha P Mitra

List of Publications by Year in descending order

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125
papers

20,360
citations

20817

60
h-index

19190

118
g-index

143
all docs

143
docs citations

143
times ranked

17768
citing authors

#	ARTICLE	IF	CITATIONS
1	Thalamocortical dysrhythmia: A neurological and neuropsychiatric syndrome characterized by magnetoencephalography. Proceedings of the National Academy of Sciences of the United States of America, 1999, 96, 15222-15227.	7.1	1,227
2	Analysis of Dynamic Brain Imaging Data. Biophysical Journal, 1999, 76, 691-708.	0.5	954
3	Temporal structure in neuronal activity during working memory in macaque parietal cortex. Nature Neuroscience, 2002, 5, 805-811.	14.8	940
4	Fluctuations and stimulus-induced changes in blood flow observed in individual capillaries in layers 2 through 4 of rat neocortex. Proceedings of the National Academy of Sciences of the United States of America, 1998, 95, 15741-15746.	7.1	775
5	Chronux: A platform for analyzing neural signals. Journal of Neuroscience Methods, 2010, 192, 146-151.	2.5	747
6	Multiple neural spike train data analysis: state-of-the-art and future challenges. Nature Neuroscience, 2004, 7, 456-461.	14.8	734
7	Gamma-band synchronization in visual cortex predicts speed of change detection. Nature, 2006, 439, 733-736.	27.8	690
8	A procedure for an automated measurement of song similarity. Animal Behaviour, 2000, 59, 1167-1176.	1.9	642
9	Nonlinear limits to the information capacity of optical fibre communications. Nature, 2001, 411, 1027-1030.	27.8	607
10	Short-time behavior of the diffusion coefficient as a geometrical probe of porous media. Physical Review B, 1993, 47, 8565-8574.	3.2	494
11	Diffusion propagator as a probe of the structure of porous media. Physical Review Letters, 1992, 68, 3555-3558.	7.8	492
12	Time-dependent diffusion of water in a biological model system.. Proceedings of the National Academy of Sciences of the United States of America, 1994, 91, 1229-1233.	7.1	469
13	Mechanism of NMR Relaxation of Fluids in Rock. Journal of Magnetic Resonance Series A, 1994, 108, 206-214.	1.6	452
14	Dynamics of the Vocal Imitation Process: How a Zebra Finch Learns Its Song. Science, 2001, 291, 2564-2569.	12.6	445
15	Tripling the capacity of wireless communications using electromagnetic polarization. Nature, 2001, 409, 316-318.	27.8	408
16	Sampling Properties of the Spectrum and Coherency of Sequences of Action Potentials. Neural Computation, 2001, 13, 717-749.	2.2	374
17	Time-Dependent Diffusion Coefficient of Fluids in Porous Media as a Probe of Surface-to-Volume Ratio. Journal of Magnetic Resonance Series A, 1993, 101, 342-346.	1.6	358
18	Coherence in Large-Scale Networks: Dimension-Dependent Limitations of Local Feedback. IEEE Transactions on Automatic Control, 2012, 57, 2235-2249.	5.7	327

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19	Automatic sorting of multiple unit neuronal signals in the presence of anisotropic and non-Gaussian variability. <i>Journal of Neuroscience Methods</i> , 1996, 69, 175-188.	2.5	319
20	A multimodal cell census and atlas of the mammalian primary motor cortex. <i>Nature</i> , 2021, 598, 86-102.	27.8	316
21	Brain-wide Maps Reveal Stereotyped Cell-Type-Based Cortical Architecture and Subcortical Sexual Dimorphism. <i>Cell</i> , 2017, 171, 456-469.e22.	28.9	301
22	Distributions of singular values for some random matrices. <i>Physical Review E</i> , 1999, 60, 3389-3392.	2.1	298
23	Visual stimuli induce waves of electrical activity in turtle cortex. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1997, 94, 7621-7626.	7.1	297
24	How sleep affects the developmental learning of bird song. <i>Nature</i> , 2005, 433, 710-716.	27.8	285
25	Fluctuation analysis of motor protein movement and single enzyme kinetics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1994, 91, 11782-11786.	7.1	273
26	An anatomic gene expression atlas of the adult mouse brain. <i>Nature Neuroscience</i> , 2009, 12, 356-362.	14.8	264
27	Scalable architecture in mammalian brains. <i>Nature</i> , 2001, 411, 189-193.	27.8	260
28	De novo establishment of wild-type song culture in the zebra finch. <i>Nature</i> , 2009, 459, 564-568.	27.8	251
29	A Proposal for a Coordinated Effort for the Determination of Brainwide Neuroanatomical Connectivity in Model Organisms at a Mesoscopic Scale. <i>PLoS Computational Biology</i> , 2009, 5, e1000334.	3.2	242
30	Multiple wave-vector extensions of the NMR pulsed-field-gradient spin-echo diffusion measurement. <i>Physical Review B</i> , 1995, 51, 15074-15078.	3.2	233
31	The role of nonlinear dynamics of the syrinx in the vocalizations of a songbird. <i>Nature</i> , 1998, 395, 67-71.	27.8	217
32	Central Versus Peripheral Determinants of Patterned Spike Activity in Rat Vibrissa Cortex During Whisking. <i>Journal of Neurophysiology</i> , 1997, 78, 1144-1149.	1.8	215
33	Learning-related coordination of striatal and hippocampal theta rhythms during acquisition of a procedural maze task. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 5644-5649.	7.1	211
34	Effects of microgeometry and surface relaxation on NMR pulsed-field-gradient experiments: Simple pore geometries. <i>Physical Review B</i> , 1992, 45, 143-156.	3.2	210
35	Pore-Size Distributions and Tortuosity in Heterogeneous Porous Media. <i>Journal of Magnetic Resonance Series A</i> , 1995, 112, 83-91.	1.6	204
36	Effects of Finite Gradient-Pulse Widths in Pulsed-Field-Gradient Diffusion Measurements. <i>Journal of Magnetic Resonance Series A</i> , 1995, 113, 94-101.	1.6	188

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37	The nature of spatiotemporal changes in cerebral hemodynamics as manifested in functional magnetic resonance imaging. <i>Magnetic Resonance in Medicine</i> , 1997, 37, 511-518.	3.0	172
38	Neural prosthetic control signals from plan activity. <i>NeuroReport</i> , 2003, 14, 591-596.	1.2	166
39	Alta-Cyclic: a self-optimizing base caller for next-generation sequencing. <i>Nature Methods</i> , 2008, 5, 679-682.	19.0	166
40	Conventions and nomenclature for double diffusion encoding NMR and MRI. <i>Magnetic Resonance in Medicine</i> , 2016, 75, 82-87.	3.0	154
41	Comparing spectra and coherences for groups of unequal size. <i>Journal of Neuroscience Methods</i> , 2007, 159, 337-345.	2.5	143
42	The Brain Atlas Concordance Problem: Quantitative Comparison of Anatomical Parcellations. <i>PLoS ONE</i> , 2009, 4, e7200.	2.5	143
43	Vocal imitation in zebra finches is inversely related to model abundance. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1999, 96, 12901-12904.	7.1	125
44	Frequency-selective control of cortical and subcortical networks by central thalamus. <i>ELife</i> , 2015, 4, e09215.	6.0	118
45	Cellular anatomy of the mouse primary motor cortex. <i>Nature</i> , 2021, 598, 159-166.	27.8	117
46	Towards a comprehensive atlas of cortical connections in a primate brain: Mapping tracer injection studies of the common marmoset into a reference digital template. <i>Journal of Comparative Neurology</i> , 2016, 524, 2161-2181.	1.6	109
47	Surface relaxation and the long-time diffusion coefficient in porous media: Periodic geometries. <i>Physical Review B</i> , 1994, 49, 215-225.	3.2	107
48	Oscillations of Local Field Potentials in the Rat Dorsal Striatum During Spontaneous and Instructed Behaviors. <i>Journal of Neurophysiology</i> , 2007, 97, 3800-3805.	1.8	97
49	The channel capacity of a fiber optics communication system: perturbation theory. <i>Journal of Lightwave Technology</i> , 2002, 20, 530-537.	4.6	94
50	Comparative three-dimensional connectome map of motor cortical projections in the mouse brain. <i>Scientific Reports</i> , 2016, 6, 20072.	3.3	94
51	Open access resource for cellular-resolution analyses of corticocortical connectivity in the marmoset monkey. <i>Nature Communications</i> , 2020, 11, 1133.	12.8	86
52	Traumatic microbleeds suggest vascular injury and predict disability in traumatic brain injury. <i>Brain</i> , 2019, 142, 3550-3564.	7.6	83
53	Studying the Song Development Process: Rationale and Methods. <i>Annals of the New York Academy of Sciences</i> , 2004, 1016, 348-363.	3.8	82
54	Brain-mapping projects using the common marmoset. <i>Neuroscience Research</i> , 2015, 93, 3-7.	1.9	82

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55	Analysis of the Trajectory of <i>Drosophila melanogaster</i> in a Circular Open Field Arena. <i>PLoS ONE</i> , 2007, 2, e1083.	2.5	79
56	Genetic dissection of the glutamatergic neuron system in cerebral cortex. <i>Nature</i> , 2021, 598, 182-187.	27.8	75
57	Understanding far-infrared absorption in the $S=1$ antiferromagnetic chain compound NENP. <i>Physical Review Letters</i> , 1994, 72, 912-915.	7.8	74
58	Self-diffusion in a periodic porous medium: A comparison of different approaches. <i>Physical Review E</i> , 1995, 51, 3393-3400.	2.1	74
59	The Challenge of Connecting the Dots in the B.R.A.I.N.. <i>Neuron</i> , 2013, 80, 270-274.	8.1	73
60	The Circuit Architecture of Whole Brains at the Mesoscopic Scale. <i>Neuron</i> , 2014, 83, 1273-1283.	8.1	72
61	Clustering of spatial gene expression patterns in the mouse brain and comparison with classical neuroanatomy. <i>Methods</i> , 2010, 50, 105-112.	3.8	70
62	Computational methods and challenges for large-scale circuit mapping. <i>Current Opinion in Neurobiology</i> , 2012, 22, 162-169.	4.2	70
63	Digital atlas of the zebra finch (<i>Taeniopygia guttata</i>) brain: A high-resolution photo atlas. <i>Journal of Comparative Neurology</i> , 2013, 521, 3702-3715.	1.6	67
64	Cell-type-based model explaining coexpression patterns of genes in the brain. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 5397-5402.	7.1	66
65	Co-expression Profiling of Autism Genes in the Mouse Brain. <i>PLoS Computational Biology</i> , 2013, 9, e1003128.	3.2	64
66	A Method for Detection and Classification of Events in Neural Activity. <i>IEEE Transactions on Biomedical Engineering</i> , 2006, 53, 1678-1687.	4.2	61
67	Metrics for comparing neuronal tree shapes based on persistent homology. <i>PLoS ONE</i> , 2017, 12, e0182184.	2.5	56
68	Analytical calculation of intracellular calcium wave characteristics. <i>Biophysical Journal</i> , 1997, 72, 2430-2444.	0.5	54
69	A Technique for Characterizing the Development of Rhythms in Bird Song. <i>PLoS ONE</i> , 2008, 3, e1461.	2.5	52
70	Pulsed-Field-Gradient NMR Measurements of Restricted Diffusion and the Return-to-the-Origin Probability. <i>Journal of Magnetic Resonance Series A</i> , 1995, 114, 47-58.	1.6	51
71	Genetic Single Neuron Anatomy Reveals Fine Granularity of Cortical Axo-Axonic Cells. <i>Cell Reports</i> , 2019, 26, 3145-3159.e5.	6.4	51
72	A high-throughput neurohistological pipeline for brain-wide mesoscale connectivity mapping of the common marmoset. <i>ELife</i> , 2019, 8, .	6.0	51

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73	Can One Concurrently Record Electrical Spikes from Every Neuron in a Mammalian Brain?. <i>Neuron</i> , 2019, 103, 1005-1015.	8.1	46
74	High-Throughput Method of Whole-Brain Sectioning, Using the Tape-Transfer Technique. <i>PLoS ONE</i> , 2015, 10, e0102363.	2.5	41
75	Compressed Genotyping. <i>IEEE Transactions on Information Theory</i> , 2010, 56, 706-723.	2.4	40
76	The effect of propagation nonlinearities on the information capacity of WDM optical fiber systems: cross-phase modulation and four-wave mixing. <i>Physica D: Nonlinear Phenomena</i> , 2004, 189, 81-99.	2.8	37
77	Temperature dependence of the electron-spin-resonance spectrum of the chain-end $S=1/2$ modes in an $S=1$ antiferromagnetic chain. <i>Physical Review B</i> , 1992, 45, 5299-5306.	3.2	36
78	Effect of topological dimension on rigidity of vehicle formations: Fundamental limitations of local feedback. , 2008, , .		35
79	NSF workshop report: Discovering general principles of nervous system organization by comparing brain maps across species. <i>Journal of Comparative Neurology</i> , 2014, 522, 1445-1453.	1.6	35
80	An assay for social interaction in <i>Drosophila fragile X</i> mutants. <i>Fly</i> , 2010, 4, 216-225.	1.7	34
81	Unidirectional monosynaptic connections from auditory areas to the primary visual cortex in the marmoset monkey. <i>Brain Structure and Function</i> , 2019, 224, 111-131.	2.3	34
82	Possible Systematic Errors in Single-Shot Measurements of the Trace of the Diffusion Tensor. <i>Journal of Magnetic Resonance Series B</i> , 1996, 111, 15-22.	1.6	32
83	Song Development: In Search of the Error-Signal. <i>Annals of the New York Academy of Sciences</i> , 2004, 1016, 364-376.	3.8	30
84	ZEBRA: Zebra finch Expression Brain Atlas—A resource for comparative molecular neuroanatomy and brain evolution studies. <i>Journal of Comparative Neurology</i> , 2020, 528, 2099-2131.	1.6	30
85	Towards quantification of vocal imitation in the zebra finch. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2002, 188, 867-878.	1.6	26
86	An active texture-based digital atlas enables automated mapping of structures and markers across brains. <i>Nature Methods</i> , 2019, 16, 341-350.	19.0	26
87	Information Capacity of Nonlinear Wavelength Division Multiplexing Fiber Optic Transmission Line. <i>Optical Fiber Technology</i> , 2001, 7, 275-288.	2.7	25
88	Markov random field models of multicasting in tree networks. <i>Advances in Applied Probability</i> , 2002, 34, 58-84.	0.7	24
89	Long-time magnetization relaxation of spins diffusing in a random field. <i>Physical Review B</i> , 1991, 44, 12035-12038.	3.2	22
90	Probing the structure of porous media using NMR spin echoes. <i>Magnetic Resonance Imaging</i> , 1994, 12, 227-230.	1.8	22

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91	A low-cost technique to cryo-protect and freeze rodent brains, precisely aligned to stereotaxic coordinates for whole-brain cryosectioning. <i>Journal of Neuroscience Methods</i> , 2013, 218, 206-213.	2.5	20
92	Frustrated spin-1/2 model in two dimensions with a known ground state. <i>Physical Review B</i> , 1991, 44, 443-445.	3.2	19
93	Comparative Principles for Next-Generation Neuroscience. <i>Frontiers in Behavioral Neuroscience</i> , 2019, 13, 12.	2.0	18
94	On variational solutions for whole brain serial-section histology using a Sobolev prior in the computational anatomy random orbit model. <i>PLoS Computational Biology</i> , 2018, 14, e1006610.	3.2	17
95	On Fundamental Limitations of Dynamic Feedback Control in Regular Large-Scale Networks. <i>IEEE Transactions on Automatic Control</i> , 2019, 64, 4936-4951.	5.7	16
96	Spectral Methods for Functional Brain Imaging. <i>Cold Spring Harbor Protocols</i> , 2014, 2014, pdb.top081075.	0.3	14
97	Restricted diffusion and the return to the origin probability at intermediate and long times. <i>Physical Review E</i> , 1997, 55, 4225-4234.	2.1	13
98	Effects of surface relaxation on NMR pulsed field gradient experiments in porous media. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1992, 186, 109-114.	2.6	12
99	Concentration maximization and local basis expansions (LBEX) for linear inverse problems. <i>IEEE Transactions on Biomedical Engineering</i> , 2006, 53, 1775-1782.	4.2	12
100	Semantic segmentation of microscopic neuroanatomical data by combining topological priors with encoder-decoder deep networks. <i>Nature Machine Intelligence</i> , 2020, 2, 585-594.	16.0	12
101	Relation of koniocellular layers of dorsal lateral geniculate to inferior pulvinar nuclei in common marmosets. <i>European Journal of Neuroscience</i> , 2019, 50, 4004-4017.	2.6	11
102	Computational neuroanatomy and co-expression of genes in the adult mouse brain, analysis tools for the Allen Brain Atlas. <i>Quantitative Biology</i> , 2013, 1, 91-100.	0.5	9
103	An Analysis of the Abstracts Presented at the Annual Meetings of the Society for Neuroscience from 2001 to 2006. <i>PLoS ONE</i> , 2008, 3, e2052.	2.5	8
104	Characterization of trial-to-trial fluctuations in local field potentials recorded in cerebral cortex of awake behaving macaque. <i>Journal of Neuroscience Methods</i> , 2010, 186, 250-261.	2.5	8
105	Multimodal cross-registration and quantification of metric distortions in marmoset whole brain histology using diffeomorphic mappings. <i>Journal of Comparative Neurology</i> , 2021, 529, 281-295.	1.6	8
106	3D Mapping of Serial Histology Sections with Anomalies Using a Novel Robust Deformable Registration Algorithm. <i>Lecture Notes in Computer Science</i> , 2019, , 162-173.	1.3	8
107	Dynamic Phenotypes: Time Series Analysis Techniques for Characterizing Neuronal and Behavioral Dynamics. <i>Neuroinformatics</i> , 2006, 4, 119-128.	2.8	7
108	The Angular Interval between the Direction of Progression and Body Orientation in Normal, Alcohol- and Cocaine Treated Fruit Flies. <i>PLoS ONE</i> , 2013, 8, e76257.	2.5	7

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109	Characterizing Animal Behavior through Audio and Video Signal Processing. IEEE MultiMedia, 2007, 14, 32-41.	1.7	6
110	Simulations of pulsed field gradient spin-echo measurements in porous media. Magnetic Resonance Imaging, 1994, 12, 241-244.	1.8	5
111	How did brains evolve?. Nature, 2002, 415, 135-135.	27.8	5
112	Chronux: a platform for analyzing neural signals. BMC Neuroscience, 2009, 10, .	1.9	5
113	Fitting elephants in modern machine learning by statistically consistent interpolation. Nature Machine Intelligence, 2021, 3, 378-386.	16.0	5
114	Computational neuroanatomy and gene expression: Optimal sets of marker genes for brain regions. , 2012, , .		4
115	Panoptic Neuroanatomy: Digital Microscopy of Whole Brains and Brain-Wide Circuit Mapping. Brain, Behavior and Evolution, 2013, 81, 203-205.	1.7	4
116	Computational Intelligence in Electrophysiology: Trends and Open Problems. Studies in Computational Intelligence, 2008, , 325-359.	0.9	2
117	Erratum to `Automatic sorting of multiple unit neuronal signals in the presence of anisotropic and non-Gaussian variability'. Journal of Neuroscience Methods, 1997, 71, 233.	2.5	1
118	Non-parametric methods for the analysis of neurobiological time-series data. , 2007, , .		1
119	Performance of Image Matching in the Computational Anatomy Gateway. , 2017, , .		1
120	Phase transitions in distributed control systems with multiplicative noise. Journal of Statistical Mechanics: Theory and Experiment, 2018, 2018, 013405.	2.3	1
121	Fast Convergence for Stochastic and Distributed Gradient Descent in the Interpolation Limit. , 2018, , .		1
122	Sizing up whole-brain neuronal tracing. Science Bulletin, 2022, 67, 883-884.	9.0	1
123	Multimedia signal processing for behavioral quantification in neuroscience. , 2006, , .		0
124	Mean field analysis of sparse reconstruction with correlated variables. , 2016, , .		0
125	The Active Atlas: Combining 3D Anatomical Models with Texture Detectors. Lecture Notes in Computer Science, 2017, , 3-11.	1.3	0