Viktor K Jirsa

List of Publications by Citations

266 papers	13,082 citations	59 h-index	109 g-index
315 ext. papers	16,889 ext. citations	4.7 avg, IF	6.96 L-index

#	Paper	IF	Citations
266	Emerging concepts for the dynamical organization of resting-state activity in the brain. *Nature Reviews Neuroscience*, **2011**, 12, 43-56	13.5	1120
265	The dynamic brain: from spiking neurons to neural masses and cortical fields. *PLoS Computational Biology*, **2008**, 4, e1000092	5	634
264	Key role of coupling, delay, and noise in resting brain fluctuations. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 10302-7	11.5	508
263	Ongoing cortical activity at rest: criticality, multistability, and ghost attractors. *Journal of Neuroscience*, **2012**, 32, 3366-75	6.6	431
262	Field Theory of Electromagnetic Brain Activity. *Physical Review Letters*, **1996**, 77, 960-963	7.4	412
261	On the nature of seizure dynamics. *Brain*, **2014**, 137, 2210-30	11.2	397
260	Noise during rest enables the exploration of the brain's dynamic repertoire. *PLoS Computational Biology*, **2008**, 4, e1000196	5	388
259	Enhancement of neural synchrony by time delay. *Physical Review Letters*, **2004**, 92, 074104	7.4	387
258	Functional connectivity dynamics: modeling the switching behavior of the resting state. *NeuroImage*, **2015**, 105, 525-35	7.9	308
257	Complete OATP1B1 and OATP1B3 deficiency causes human Rotor syndrome by interrupting conjugated bilirubin reuptake into the liver. *Journal of Clinical Investigation*, **2012**, 122, 519-28	15.9	265
256	Resting brains never rest: computational insights into potential cognitive architectures. *Trends in Neurosciences*, **2013**, 36, 268-74	13.3	240
255	The Virtual Brain: a simulator of primate brain network dynamics. *Frontiers in Neuroinformatics*, **2013**, 7, 10	3.9	214
254	Defining epileptogenic networks: Contribution of SEEG and signal analysis. *Epilepsia*, **2017**, 58, 1131-1147	6.4	206
253	Transitions to synchrony in coupled bursting neurons. *Physical Review Letters*, **2004**, 92, 028101	7.4	182
252	A derivation of a macroscopic field theory of the brain from the quasi-microscopic neural dynamics. *Physica D: Nonlinear Phenomena*, **1997**, 99, 503-526	3.3	177
251	The dynamics of resting fluctuations in the brain: metastability and its dynamical cortical core. *Scientific Reports*, **2017**, 7, 3095	4.9	175
250	Mathematical framework for large-scale brain network modeling in The Virtual Brain. *NeuroImage*, **2015**, 111, 385-430	7.9	166

249	The Virtual Epileptic Patient: Individualized whole-brain models of epilepsy spread. *NeuroImage*, **2017**, 145, 377-388	7.9	163
248	Dynamics of Interpersonal Coordination **2008**, 281-308		159
247	The virtual brain integrates computational modeling and multimodal neuroimaging. *Brain Connectivity*, **2013**, 3, 121-45	2.7	151
246	Local and global stabilization of coordination by sensory information. *Experimental Brain Research*, **2000**, 134, 9-20	2.3	149
245	A systematic framework for functional connectivity measures. *Frontiers in Neuroscience*, **2014**, 8, 405	5.1	142
244	Individual brain structure and modelling predict seizure propagation. *Brain*, **2017**, 140, 641-654	11.2	139
243	Cross-frequency coupling in real and virtual brain networks. *Frontiers in Computational Neuroscience* , **2013**, 7, 78	3.5	125
242	Spatiotemporal pattern formation in neural systems with heterogeneous connection topologies. *Physical Review E*, **2000**, 62, 8462-5	2.4	113
241	A low dimensional description of globally coupled heterogeneous neural networks of excitatory and inhibitory neurons. *PLoS Computational Biology*, **2008**, 4, e1000219	5	110
240	Identification of optimal structural connectivity using functional connectivity and neural modeling. *Journal of Neuroscience*, **2014**, 34, 7910-6	6.6	108
239	Connecting cortical and behavioral dynamics: bimanual coordination. *Neural Computation*, **1998**, 10, 2019-45	2.9	105
238	Computational models of epileptiform activity. *Journal of Neuroscience Methods*, **2016**, 260, 233-51	3	103
237	Spatiotemporal forward solution of the EEG and MEG using network modeling. *IEEE Transactions on Medical Imaging*, **2002**, 21, 493-504	11.7	99
236	Cortical network dynamics with time delays reveals functional connectivity in the resting brain. *Cognitive Neurodynamics*, **2008**, 2, 115-20	4.2	94
235	How anatomy shapes dynamics: a semi-analytical study of the brain at rest by a simple spin model. *Frontiers in Computational Neuroscience*, **2012**, 6, 68	3.5	92
234	Distinct timing mechanisms produce discrete and continuous movements. *PLoS Computational Biology*, **2008**, 4, e1000061	5	92
233	Extending the HKB model of coordinated movement to oscillators with different eigenfrequencies. *Biological Cybernetics*, **1996**, 74, 21-30	2.8	88
232	Connectivity and dynamics of neural information processing. *Neuroinformatics*, **2004**, 2, 183-204	3.2	86

231	Transcranial direct current stimulation changes resting state functional connectivity: A large-scale brain network modeling study. *NeuroImage*, **2016**, 140, 174-87	7.9	81
230	Will a large complex system with time delays be stable?. *Physical Review Letters*, **2004**, 93, 070602	7.4	81
229	Inferring multi-scale neural mechanisms with brain network modelling. *ELife*, **2018**, 7,	8.9	80
228	The Virtual Brain: a neuroinformatics platform for simulating large-scale brain network models. *BMC Neuroscience*, **2013**, 14,	3.2	78
227	Variability in brain network model dynamics: comparison of neural mass models and empirical connectivity datasets in The Virtual Brain. *BMC Neuroscience*, **2013**, 14,	3.2	78
226	Modeling Alpha-Band Functional Connectivity for MEG Resting State Data: Oscillations and Delays in a Spiking Neuron Model. *BMC Neuroscience*, **2013**, 14,	3.2	78
225	Modeling epileptic dynamics in the hippocampus using a multiscale approach. *BMC Neuroscience*, **2013**, 14,	3.2	78
224	On the spatiotemporal dynamics and couplings across epileptogenic networks. *BMC Neuroscience*, **2013**, 14,	3.2	78
223	Dynamics of neural systems in epilepsy. *BMC Neuroscience*, **2013**, 14,	3.2	78
222	Accelerating The Virtual Brain with code generation and GPU computing. *BMC Neuroscience*, **2013**, 14,	3.2	78
221	26th Annual Computational Neuroscience Meeting (CNS*2017): Part 1. *BMC Neuroscience*, **2017**, 18,	3.2	78
220	Large-scale brain dynamics: effect of connectivity resolution. *BMC Neuroscience*, **2015**, 16,	3.2	78
219	Investigating the effect of electrical brain stimulation using a connectome-based brain network model. *BMC Neuroscience*, **2015**, 16,	3.2	78
218	An automated pipeline for constructing personalized virtual brains from multimodal neuroimaging data. *NeuroImage*, **2015**, 117, 343-57	7.9	75
217	Permittivity coupling across brain regions determines seizure recruitment in partial epilepsy. *Journal of Neuroscience*, **2014**, 34, 15009-21	6.6	70
216	The excitator as a minimal model for the coordination dynamics of discrete and rhythmic movement generation. *Journal of Motor Behavior*, **2005**, 37, 35-51	1.4	70
215	Changes in interictal spike features precede the onset of temporal lobe epilepsy. *Annals of Neurology*, **2012**, 71, 805-14	9.4	67
214	The Rediscovery of Slowness: Exploring the Timing of Cognition. *Trends in Cognitive Sciences*, **2015**, 19, 616-628	14	65

213	The effects of physiologically plausible connectivity structure on local and global dynamics in large scale brain models. *Journal of Neuroscience Methods*, **2009**, 183, 86-94	3	65
212	Reconstruction of the spatio-temporal dynamics of a human magnetoencephalogram. *Physica D: Nonlinear Phenomena*, **1995**, 89, 100-122	3.3	64
211	Symmetry Breaking in Space-Time Hierarchies Shapes Brain Dynamics and Behavior. *Neuron*, **2017**, 94, 1010-1026	13.9	63
210	Multisensory integration for timing engages different brain networks. *NeuroImage*, **2007**, 34, 764-73	7.9	61
209	Synchrony and clustering in heterogeneous networks with global coupling and parameter dispersion. *Physical Review Letters*, **2005**, 94, 018106	7.4	61
208	Predicting the spatiotemporal diversity of seizure propagation and termination in human focal epilepsy. *Nature Communications*, **2018**, 9, 1088	17.4	59
207	Spatiotemporal re-organization of large-scale neural assemblies underlies bimanual coordination. *NeuroImage*, **2012**, 62, 1582-92	7.9	59
206	Neural field dynamics with local and global connectivity and time delay. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2009**, 367, 1131-43	3	59
205	The Scientific Case for Brain Simulations. *Neuron*, **2019**, 102, 735-744	13.9	58
204	How do parcellation size and short-range connectivity affect dynamics in large-scale brain network models?. *NeuroImage*, **2016**, 142, 135-149	7.9	58
203	Theory of the relation between human brain activity (MEG) and hand movements. *NeuroImage*, **2000**, 11, 359-69	7.9	57
202	Bottom up modeling of the connectome: linking structure and function in the resting brain and their changes in aging. *NeuroImage*, **2013**, 80, 318-29	7.9	56
201	Parametric stabilization of biological coordination: a theoretical model. *Journal of Biological Physics* , **2000**, 26, 85-112	1.6	55
200	The multiscale entropy: Guidelines for use and interpretation in brain signal analysis. *Journal of Neuroscience Methods*, **2016**, 273, 175-190	3	53
199	Mode level cognitive subtraction (MLCS) quantifies spatiotemporal reorganization in large-scale brain topographies. *NeuroImage*, **2008**, 42, 663-74	7.9	53
198	Functional architectures and structured flows on manifolds: a dynamical framework for motor behavior. *Psychological Review*, **2014**, 121, 302-36	6.3	52
197	Selective Activation of Resting-State Networks following Focal Stimulation in a Connectome-Based Network Model of the Human Brain. *ENeuro*, **2016**, 3,	3.9	52
196	Anatomic consistencies across epilepsies: a stereotactic-EEG informed high-resolution structural connectivity study. *Brain*, **2017**, 140, 2639-2652	11.2	45

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192	The Virtual Brain: Modeling Biological Correlates of Recovery after Chronic Stroke. *Frontiers in Neurology*, **2015**, 6, 228	4.1	40
191	Anatomical connectivity and the resting state activity of large cortical networks. *NeuroImage*, **2013**, 65, 127-38	7.9	40
190	Phase-lags in large scale brain synchronization: Methodological considerations and in-silico analysis. *PLoS Computational Biology*, **2018**, 14, e1006160	5	39
189	Seizures, refractory status epilepticus, and depolarization block as endogenous brain activities. *Physical Review E*, **2015**, 91, 010701	2.4	39
188	Systematic approximations of neural fields through networks of neural masses in the virtual brain. *NeuroImage*, **2013**, 83, 704-25	7.9	39
187	Functional Mechanisms of Recovery after Chronic Stroke: Modeling with the Virtual Brain. *ENeuro*, **2016**, 3,	3.9	39
186	Computational modeling of seizure dynamics using coupled neuronal networks: factors shaping epileptiform activity. *PLoS Computational Biology*, **2015**, 11, e1004209	5	38
185	Recruitment of degrees of freedom stabilizes coordination.. *Journal of Experimental Psychology: Human Perception and Performance*, **2000**, 26, 671-692	2.6	38
184	Fitts' law is not continuous in reciprocal aiming. *Proceedings of the Royal Society B: Biological Sciences*, **2010**, 277, 1179-84	4.4	37
183	Controlling seizure propagation in large-scale brain networks. *PLoS Computational Biology*, **2019**, 15, e1006805	5	37
182	Fast-Slow Bursters in the Unfolding of a High Codimension Singularity and the Ultra-slow Transitions of Classes. *Journal of Mathematical Neuroscience*, **2017**, 7, 7	2.4	36
181	Synchronization in networks with random interactions: theory and applications. *Chaos*, **2006**, 16, 015109	3.3	35
180	Heterogeneity of time delays determines synchronization of coupled oscillators. *Physical Review E*, **2016**, 94, 012209	2.4	35
179	Using the virtual brain to reveal the role of oscillations and plasticity in shaping brain's dynamical landscape. *Brain Connectivity*, **2014**, 4, 791-811	2.7	34
178	Relating Alpha Power and Phase to Population Firing and Hemodynamic Activity Using a Thalamo-cortical Neural Mass Model. *PLoS Computational Biology*, **2015**, 11, e1004352	5	34

177	From birdsong to human speech recognition: bayesian inference on a hierarchy of nonlinear dynamical systems. *PLoS Computational Biology*, **2013**, 9, e1003219	5	34
176	Whole-brain analytic measures of network communication reveal increased structure-function correlation in right temporal lobe epilepsy. *NeuroImage: Clinical*, **2016**, 11, 707-718	5.3	34
175	Time scale hierarchies in the functional organization of complex behaviors. *PLoS Computational Biology*, **2011**, 7, e1002198	5	33
174	Language Use, Coordination, and the Emergence of Cooperative Action **2008**, 261-279		33
173	Neural field dynamics with heterogeneous connection topology. *Physical Review Letters*, **2007**, 98, 238102	7.4	31
172	Individual structural features constrain the mouse functional connectome. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**,	11.5	31
171	Linking Molecular Pathways and Large-Scale Computational Modeling to Assess Candidate Disease Mechanisms and Pharmacodynamics in Alzheimer's Disease. *Frontiers in Computational Neuroscience*, **2019**, 13, 54	3.5	30
170	Analytical Operations Relate Structural and Functional Connectivity in the Brain. *PLoS ONE*, **2016**, 11, e0157292	3.7	30
169	The Virtual Mouse Brain: A Computational Neuroinformatics Platform to Study Whole Mouse Brain Dynamics. *ENeuro*, **2017**, 4,	3.9	30
168	How delays matter in an oscillatory whole-brain spiking-neuron network model for MEG alpha-rhythms at rest. *NeuroImage*, **2014**, 87, 383-94	7.9	29
167	Multistability in Large Scale Models of Brain Activity. *PLoS Computational Biology*, **2015**, 11, e1004644	5	29
166	Behavioral Dynamics of Visually Guided Locomotion **2008**, 45-75		29
165	A taxonomy of seizure dynamotypes. *ELife*, **2020**, 9,	8.9	29
164	The Human Brain Project-Synergy between neuroscience, computing, informatics, and brain-inspired technologies. *PLoS Biology*, **2019**, 17, e3000344	9.7	28
163	A new neuroinformatics approach to personalized medicine in neurology: The Virtual Brain. *Current Opinion in Neurology*, **2016**, 29, 429-36	7.1	28
162	Characterization of Cortical Networks and Corticocortical Functional Connectivity Mediating Arbitrary Visuomotor Mapping. *Journal of Neuroscience*, **2015**, 35, 12643-58	6.6	27
161	Dynamics of multifrequency coordination using parametric driving: theory and experiment. *Biological Cybernetics*, **2005**, 93, 6-21	2.8	27
160	Dynamic Functional Connectivity between order and randomness and its evolution across the human adult lifespan. *NeuroImage*, **2020**, 222, 117156	7.9	27

159	Effects of task and age on the magnitude and structure of force fluctuations: insights into underlying neuro-behavioral processes. *BMC Neuroscience*, **2015**, 16, 12	3.2	26
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157	Integration and segregation in auditory streaming. *Physica D: Nonlinear Phenomena*, **2005**, 212, 137-159	3.3	25
156	Neuronal Dynamics and Brain Connectivity. *Understanding Complex Systems*, **2007**, 3-64	0.4	24
155	Optimization of surgical intervention outside the epileptogenic zone in the Virtual Epileptic Patient (VEP). *PLoS Computational Biology*, **2019**, 15, e1007051	5	23
154	Complex processes from dynamical architectures with time-scale hierarchy. *PLoS ONE*, **2011**, 6, e16589	3.7	23
153	Neural population modes capture biologically realistic large scale network dynamics. *Bulletin of Mathematical Biology*, **2011**, 73, 325-43	2.1	23
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150	Integrating neuroinformatics tools in TheVirtualBrain. *Frontiers in Neuroinformatics*, **2014**, 8, 36	3.9	22
149	The HKB model revisited: How varying the degree of symmetry controls dynamics. *Human Movement Science*, **2000**, 19, 425-449	2.4	22
148	The Bayesian Virtual Epileptic Patient: A probabilistic framework designed to infer the spatial map of epileptogenicity in a personalized large-scale brain model of epilepsy spread. *NeuroImage*, **2020**, 217, 116839	7.9	20
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146	Is Fitts' law continuous in discrete aiming?. *PLoS ONE*, **2012**, 7, e41190	3.7	20
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143	Resting state brain dynamics and its transients: a combined TMS-EEG study. *Scientific Reports*, **2016**, 6, 31220	4.9	17
142	Perturbation-induced false starts as a test of the jirsa-kelso excitator model. *Journal of Motor Behavior*, **2009**, 41, 147-57	1.4	17

141	Recruitment of degrees of freedom stabilizes coordination. *Journal of Experimental Psychology: Human Perception and Performance*, **2000**, 26, 671-92	2.6	17
140	Distinct timing mechanisms are implicated in distinct circle drawing tasks. *Neuroscience Letters*, **2010**, 472, 24-8	3.3	16
139	Neural field dynamics under variation of local and global connectivity and finite transmission speed. *Physica D: Nonlinear Phenomena*, **2009**, 238, 2331-2346	3.3	16
138	Multicenter Alzheimer's and Parkinson's disease immune biomarker verification study. *Alzheimer's and Dementia*, **2020**, 16, 292-304	1.2	16
137	Dynamical Mechanisms of Interictal Resting-State Functional Connectivity in Epilepsy. *Journal of Neuroscience*, **2020**, 40, 5572-5588	6.6	15
136	INFORMATION PROCESSING IN BRAIN AND BEHAVIOR DISPLAYED IN LARGE-SCALE SCALP TOPOGRAPHIES SUCH AS EEG AND MEG. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2004**, 14, 679-692	2	14
135	CYP7A1 promoter polymorphism -203A>C affects bile salt synthesis rate in patients after ileal resection. *Journal of Lipid Research*, **2008**, 49, 2664-7	6.3	13
134	Traversing Scales of Brain and Behavioral Organization I: Concepts and Experiments. *Springer Series in Synergetics*, **1999**, 73-89	0.4	13
133	Multiple Kernel Learning Model for Relating Structural and Functional Connectivity in the Brain. *Scientific Reports*, **2018**, 8, 3265	4.9	12
132	Does changing Fitts index of difficulty evoke transitions in movement dynamics?. *EPJ Nonlinear Biomedical Physics*, **2015**, 3,		12
131	On the time course of synchronization patterns of neuronal discharges in the human brain during cognitive tasks. *PLoS ONE*, **2013**, 8, e63293	3.7	12
130	Phase description of spiking neuron networks with global electric and synaptic coupling. *Physical Review E*, **2011**, 83, 051909	2.4	12
129	Correction for Deco et al., Key role of coupling, delay, and noise in resting brain fluctuations. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 12207-12208	11.5	12
128	The Epileptor Model: A Systematic Mathematical Analysis Linked to the Dynamics of Seizures, Refractory Status Epilepticus, and Depolarization Block. *ENeuro*, **2020**, 7,	3.9	12
127	Structure and Topology Dynamics of Hyper-Frequency Networks during Rest and Auditory Oddball Performance. *Frontiers in Computational Neuroscience*, **2016**, 10, 108	3.5	12
126	Brain state dependent postinhibitory rebound in entorhinal cortex interneurons. *Journal of Neuroscience*, **2012**, 32, 6501-10	6.6	11
125	A dynamical approach to speech categorization: Two routes to learning. *New Ideas in Psychology*, **2008**, 26, 208-226	2.5	11
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122	Imperfect Symmetry and the Elementary Coordination Law **2008**, 3-25		11
121	EEG Coordination Dynamics: Neuromarkers of Social Coordination **2008**, 309-323		11
120	Modular slowing of resting-state dynamic functional connectivity as a marker of cognitive dysfunction induced by sleep deprivation. *NeuroImage*, **2020**, 222, 117155	7.9	11
119	Towards a Pathway Inventory of the Human Brain for Modeling Disease Mechanisms Underlying Neurodegeneration. *Journal of Alzheimer's Disease*, **2016**, 52, 1343-60	4.3	11
118	Modern concepts of seizure modeling. *International Review of Neurobiology*, **2014**, 114, 121-53	4.4	10
117	Governing Coordination. Why do Muscles Matter?. *Understanding Complex Systems*, **2004**, 141-154	0.4	10
116	Quantifying the Ebbinghaus figure effect: target size, context size, and target-context distance determine the presence and direction of the illusion. *Frontiers in Psychology*, **2015**, 6, 1679	3.4	9
115	Spatiotemporal multi-resolution approximation of the Amari type neural field model. *NeuroImage*, **2013**, 66, 88-102	7.9	9
114	Postural Coordination Dynamics in Standing Humans. *Understanding Complex Systems*, **2004**, 103-121	0.4	9
113	Brain Signatures of Team Performance. *Lecture Notes in Computer Science*, **2011**, 288-297	0.9	9
112	Dynamic Functional Connectivity between Order and Randomness and its Evolution across the Human Adult Lifespan		9
111	Functional coordination of muscles underlying changes in behavioural dynamics. *Scientific Reports*, **2016**, 6, 27759	4.9	8
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104	Human Trajectory Formation: Taxonomy of Movement Based on Phase Flow Topology **2008**, 77-92		8
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98	Landscapes Beyond the HKB Model **2008**, 27-44		7
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96	Data-driven method to infer the seizure propagation patterns in an epileptic brain from intracranial electroencephalography. *PLoS Computational Biology*, **2021**, 17, e1008689	5	7
95	MULAN: Evaluation and ensemble statistical inference for functional connectivity. *NeuroImage*, **2018**, 166, 167-184	7.9	6
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92	Identifying optimal working points of individual Virtual Brains: A large-scale brain network modelling study		6
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90	Controversies on the network theory of epilepsy: Debates held during the ICTALS 2019 conference. *Seizure: the Journal of the British Epilepsy Association*, **2020**, 78, 78-85	3.2	5
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87	Comment on "transitions to synchrony in coupled bursting neurons". *Physical Review Letters*, **2004**, 93, 229801; author reply 229802	7.4	5
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83	Wheels Within Wheels: Theory and Practice of Epileptic Networks. *Epilepsy Currents*, **2021**, 153575972110155663	10.3	5
82	Visually Evoked Spiking Evolves While Spontaneous Ongoing Dynamics Persist. *Frontiers in Systems Neuroscience*, **2015**, 9, 183	3.5	5
81	VEP atlas: An anatomic and functional human brain atlas dedicated to epilepsy patients. *Journal of Neuroscience Methods*, **2021**, 348, 108983	3	5
80	In silico exploration of mouse brain dynamics by focal stimulation reflects the organization of functional networks and sensory processing. *Network Neuroscience*, **2020**, 4, 807-851	5.6	4
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73	Integration and Segregation of Perceptual and Motor Behavior. *Understanding Complex Systems*, **2004**, 243-259	0.4	4
72	Brain-Computer Interfaces (BCI): Restoration of Movement and Thought from Neuroelectric and Metabolic Brain Activity **2008**, 229-252		4
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70	Modular slowing of resting-state dynamic Functional Connectivity as a marker of cognitive dysfunction induced by sleep deprivation		4

69	Brain-scale emergence of slow-wave synchrony and highly responsive asynchronous states based on biologically realistic population models simulated in The Virtual Brain		4
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64	Entropy, free energy, symmetry and dynamics in the brain. *Journal of Physics Complexity*, **2022**, 3, 015007	1.8	3
63	Structured Flows on Manifolds as guiding concepts in brain science **2020**, 89-102		3
62	Neural Indices of Behavioral Instability in Coordination Dynamics **2008**, 205-227		3
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