Gregor SchÃ¶ner

List of Publications by Year
in descending order

178 papers	16,237 citations	20797 60 h-index	16636 123 g-index
186 all docs	186 docs citations	186 times ranked	5935 citing authors

#	Article	IF	Citations
1	The uncontrolled manifold concept: identifying control variables for a functional task. Experimental Brain Research, 1999, 126, 289-306.	0.7	1,163
2	Dynamic pattern generation in behavioral and neural systems. Science, 1988, 239, 1513-1520.	6.0	1,154
3	The dynamics of embodiment: A field theory of infant perseverative reaching. Behavioral and Brain Sciences, 2001, 24, 1-34.	0.4	1,128
4	Motor Control Strategies Revealed in the Structure of Motor Variability. Exercise and Sport Sciences Reviews, 2002, 30, 26-31.	1.6	646
5	Toward a New Theory of Motor Synergies. Motor Control, 2007, 11, 276-308.	0.3	621
6	Dynamic field theory of movement preparation.. Psychological Review, 2002, 109, 545-572.	2.7	503
7	A stochastic theory of phase transitions in human hand movement. Biological Cybernetics, 1986, 53, 247-257.	0.6	485
8	Nonequilibrium phase transitions in coordinated biological motion: critical fluctuations. Physics Letters, Section A: General, Atomic and Solid State Physics, 1986, 118, 279-284.	0.9	467
9	Dynamics of behavior: Theory and applications for autonomous robot architectures. Robotics and Autonomous Systems, 1995, 16, 213-245.	3.0	375
10	A synergetic theory of quadrupedal gaits and gait transitions. Journal of Theoretical Biology, 1990, 142, 359-391.	0.8	353
11	Self-organization of coordinative movement patterns. Human Movement Science, 1988, 7, 27-46.	0.6	337
12	Identifying the control structure of multijoint coordination during pistol shooting. Experimental Brain Research, 2000, 135, 382-404.	0.7	308
13	Learning as Change of Coordination Dynamics: Theory and Experiment. Journal of Motor Behavior, 1992, 24, 29-48.	0.5	293
14	Structure of motor variability in marginally redundant multifinger force production tasks. Experimental Brain Research, 2001, 141, 153-165.	0.7	256
15	Control and Estimation of Posture During Quiet Stance Depends on Multijoint Coordination. Journal of Neurophysiology, 2007, 97, 3024-3035.	0.9	249
16	A dynamic theory of coordination of discrete movement. Biological Cybernetics, 1990, 63, 257-270.	0.6	246
17	Recent Developments and Problems in Human Movement Science and Their Conceptual Implications. Ecological Psychology, 1995, 7, 291-314.	0.7	239
18	Nonequilibrium phase transitions in coordinated biological motion: Critical slowing down and switching time. Physics Letters, Section A: General, Atomic and Solid State Physics, 1987, 123, 390-394.	0.9	233

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19	Bridging the representational gap in the dynamic systems approach to development. Developmental Science, 2003, 6, 392-412.	1.3	200
20	Phase-Locked Modes, Phase Transitions and Component Oscillators in Biological Motion. Physica Scripta, 1987, 35, 79-87.	1.2	197
21	Using dynamic field theory to rethink infant habituation.. Psychological Review, 2006, 113, 273-299.	2.7	192
22	Saccadic motor planning by integrating visual information and pre-information on neural dynamic fields. Biological Cybernetics, 1995, 73, 49-60.	0.6	191
23	Bistability and hysteresis in the organization of apparent motion patterns.. Journal of Experimental Psychology: Human Perception and Performance, 1993, 19, 63-80.	0.7	182
24	Position and Velocity Coupling of Postural Sway to Somatosensory Drive. Journal of Neurophysiology, 1998, 79, 1661-1674.	0.9	180
25	Frequency dependence of the action-perception cycle for postural control in a moving visual environment: relative phase dynamics. Biological Cybernetics, 1994, 71, 489-501.	0.6	177
26	Coupling of fingertip somatosensory information to head and body sway. Experimental Brain Research, 1997, 113, 475-483.	0.7	168
27	Temporal stability of the action-perception cycle for postural control in a moving visual environment. Experimental Brain Research, 1994, 97, 477-86.	0.7	167
28	Testing the Dynamic Field Theory: Working Memory for Locations Becomes More Spatially Precise Over Development. Child Development, 2003, 74, 1393-1417.	1.7	165
29	Understanding finger coordination through analysis of the structure of force variability. Biological Cybernetics, 2002, 86, 29-39.	0.6	162
30	Dynamics governs switching among patterns of coordination in biological movement. Physics Letters, Section A: General, Atomic and Solid State Physics, 1988, 134, 8-12.	0.9	147
31	A mode hypothesis for finger interaction during multi-finger force-production tasks. Biological Cybernetics, 2003, 88, 91-98.	0.6	147
32	Preshaping and continuous evolution of motor cortical representations during movement preparation. European Journal of Neuroscience, 2003, 18, 2047-2058.	1.2	144
33	Redundancy, Self-Motion, and Motor Control. Neural Computation, 2009, 21, 1371-1414.	1.3	144
34	Parametric Population Representation of Retinal Location: Neuronal Interaction Dynamics in Cat Primary Visual Cortex. Journal of Neuroscience, 1999, 19, 9016-9028.	1.7	135
35	A dynamical systems approach to task-level system integration used to plan and control autonomous vehicle motion. Robotics and Autonomous Systems, 1992, 10, 253-267.	3.0	130
36	The distribution of neuronal population activation (DPA) as a tool to study interaction and integration in cortical representations. Journal of Neuroscience Methods, 1999, 94, 53-66.	1.3	125

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37	A Dynamic Neural Field Model of Visual Working Memory and Change Detection. Psychological Science, 2009, 20, 568-577.	1.8	123
38	Motor control theories and their applications. Medicina (Lithuania), 2010, 46, 382.	0.8	123
39	A dynamic pattern theory of behavioral change. Journal of Theoretical Biology, 1988, 135, 501-524.	0.8	120
40	Dynamic theory of action-perception patterns: the â€œmoving roomâ€•paradigm. Biological Cybernetics, 1991, 64, 455-462.	0.6	108
41	Finger coordination during discrete and oscillatory force production tasks. Experimental Brain Research, 2002, 146, 419-432.	0.7	108
42	Motor equivalent control of the center of mass in response to support surface perturbations. Experimental Brain Research, 2007, 180, 163-179.	0.7	108
43	Timing, Clocks, and Dynamical Systems. Brain and Cognition, 2002, 48, 31-51.	0.8	105
44	Shorter latencies for motion trajectories than for flashes in population responses of cat primary visual cortex. Journal of Physiology, 2004, 556, 971-982.	1.3	105
45	The time course of saccadic decision making: Dynamic field theory. Neural Networks, 2006, 19, 1059-1074.	3.3	99
46	Learning and recall in a dynamic theory of coordination patterns. Biological Cybernetics, 1989, 62, 39-54.	0.6	95
47	Prior information preshapes the population representation of movement direction in motor cortex. NeuroReport, 1998, 9, 315-319.	0.6	94
48	Moving Toward a Grand Theory of Development: In Memory of Esther Thelen. Child Development, 2006, 77, 1521-1538.	1.7	90
49	Effects of varying task constraints on solutions to joint coordination in a sit-to-stand task. Experimental Brain Research, 2001, 141, 485-500.	0.7	89
50	Dynamical Systems Approaches to Cognition. , 2001, , 101-126.		87
51	Moving to higher ground: The dynamic field theory and the dynamics of visual cognition. New Ideas in Psychology, 2008, 26, 227-251.	1.2	87
52	The dynamic approach to autonomous robotics demonstrated on a low-level vehicle platform. Robotics and Autonomous Systems, 1997, 21, 23-35.	3.0	86
53	Coordination underlying the control of whole body momentum during sit-to-stand. Gait and Posture, 2002, 15, 45-55.	0.6	86
54	An embodied account of serial order: How instabilities drive sequence generation. Neural Networks, 2010, 23, 1164-1179.	3.3	80

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55	Effect of accuracy constraint on joint coordination during pointing movements. Experimental Brain Research, 2003, 149, 276-288.	0.7	78
56	Goal-Equivalent Joint Coordination in Pointing: Affect of Vision and Arm Dominance. Motor Control, 2002, 6, 183-207.	0.3	77
57	Approaches to analysis of handwriting as a task of coordinating a redundant motor system. Human Movement Science, 2003, 22, 153-171.	0.6	73
58	Self-calibration based on invariant view recognition: Dynamic approach to navigation. Robotics and Autonomous Systems, 1997, 20, 133-156.	3.0	70
59	Low-frequency oscillations of visual, auditory and somatosensory cortical neurons evoked by sensory stimulation. International Journal of Psychophysiology, 1997, 26, 205-227.	0.5	64
60	Learning to recognize objects on the fly: A neurally based dynamic field approach. Neural Networks, 2008, 21, 562-576.	3.3	64
61	Using Dynamic Field Theory to extend the embodiment stance toward higher cognition. New Ideas in Psychology, 2013, 31, 322-339.	1.2	63
62	A layered neural architecture for the consolidation, maintenance, and updating of representations in visual working memory. Brain Research, 2009, 1299, 17-32.	1.1	59
63	Dynamic theory of action-perception patterns: The time-before-contact paradigm. Human Movement Science, 1994, 13, 415-439.	0.6	56
64	The dynamical foundations of motion pattern formation: Stability, selective adaptation, and perceptual continuity. Perception & Psychophysics, 2003, 65, 429-457.	2.3	54
65	What Does Theoretical Neuroscience Have to Offer the Study of Behavioral Development?. , 2007, , 320-361.		53
66	Dynamic instabilities as mechanisms for emergence. Developmental Science, 2007, 10, 69-74.	1.3	50
67	Dynamic fields endow behavior-based robots with representations. Robotics and Autonomous Systems, 1995, 14, 55-77.	3.0	49
68	Analyzing Variance in Multi-Degree-of-Freedom Movements: Uncovering Structure versus Extracting Correlations. Motor Control, 2007, 11, 259-275.	0.3	48
69	Limb versus Speech Motor Control: A Conceptual Review. Motor Control, 2011, 15, 5-33.	0.3	45
70	A robotic architecture for action selection and behavioral organization inspired by human cognition. , 2012, , .		43
71	Motor Abundance Contributes to Resolving Multiple Kinematic Task Constraints. Motor Control, 2010, 14, 83-115.	0.3	42
72	Reference-related inhibition produces enhanced position discrimination and fast repulsion near axes of symmetry. Perception & Psychophysics, 2006, 68, 1027-1046.	2.3	41

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73	Perceptual Stability and the Selective Adaptation of Perceived and Unperceived Motion Directions. Vision Research, 1996, 36, 3311-3323.	0.7	40
74	Dynamic Neural Fields as Building Blocks of a Cortex-Inspired Architecture for Robotic Scene Representation. IEEE Transactions on Autonomous Mental Development, 2011, 3, 74-91.	2.3	40
75	Motor control theories and their applications. Medicina (Lithuania), 2010, 46, 382-92.	0.8	40
76	Temporal Asymmetry in Darkâ€"Bright Processing Initiates Propagating Activity across Primary Visual Cortex. Journal of Neuroscience, 2016, 36, 1902-1913.	1.7	38
77	Dynamical Systems Approach for the Autonomous Avoidance of Obstacles and Joint-limits for an Redundant Robot Arm. , 2006, , .		37
78	Identification of the nonlinear state-space dynamics of the action-perception cycle for visually induced postural sway. Biological Cybernetics, 1996, 74, 427-437.	0.6	34
79	Dynamic interactions between visual working memory and saccade target selection. Journal of Vision, 2014, 14, 9-9.	0.1	34
80	From Interlimb Coordination to Trajectory Formation. , 1994, , 339-368.		34
81	Differential joint coordination in the tasks of standing up and sitting down. Journal of Electromyography and Kinesiology, 2002, 12, 493-505.	0.7	33
82	Behavioral and electrocortical evidence of an interaction between probability and task metrics in movement preparation. Experimental Brain Research, 2002, 144, 303-313.	0.7	33
83	Motor equivalence during multi-finger accurate force production. Experimental Brain Research, 2015, 233, 487-502.	0.7	31
84	A neurobehavioral model of flexible spatial language behaviors.. Journal of Experimental Psychology: Learning Memory and Cognition, 2012, 38, 1490-1511.	0.7	28
85	The influence of adaptation and stochastic fluctuations on spontaneous perceptual changes for bistable stimuli. Perception & Psychophysics, 1997, 59, 509-522.	2.3	26
86	Sensorimotor Learning Biases Choice Behavior: A Learning Neural Field Model for Decision Making. PLoS Computational Biology, 2012, 8, e1002774.	1.5	26
87	Development as Change of System Dynamics: Stability, Instability, and Emergence. , 2009, , 25-48.		26
88	The Dynamic Neural Field Theory of Motor Programming: Arm and Eye Movements. Advances in Psychology, 1997, , 271-310.	0.1	24
89	A neural mechanism for coordinate transformation predicts pre-saccadic remapping. Biological Cybernetics, 2012, 106, 89-109.	0.6	24
90	Use of the Uncontrolled Manifold (UCM) Approach to Understand Motor Variability, Motor Equivalence, and Self-motion. Advances in Experimental Medicine and Biology, 2014, 826, 91-100.	0.8	24

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91	Making driver modeling attractive. IEEE Intelligent Systems, 2005, 20, 8-12.	4.0	23
92	A process account of the uncontrolled manifold structure of joint space variance in pointing movements. Biological Cybernetics, 2019, 113, 293-307.	0.6	21
93	A Neural Dynamic Architecture for Reaching and Grasping Integrates Perception and Movement Generation and Enables On-Line Updating. Frontiers in Neurorobotics, 2017, 11, 9.	1.6	20
94	A neural-dynamic architecture for behavioral organization of an embodied agent. , 2011, , .		19
95	Motor equivalence and self-motion induced by different movement speeds. Experimental Brain Research, 2011, 209, 319-332.	0.7	19
96	A multi-joint model of quiet, upright stance accounts for the â€œuncontrolled manifoldâ€• structure of joint variance. Biological Cybernetics, 2017, 111, 389-403.	0.6	19
97	Dynamic Field Theory as a Framework for Understanding Embodied Cognition. , 2008, , 241-271.		18
98	A counterchange mechanism for the perception of motion. Acta Psychologica, 2009, 132, 1-21.	0.7	18
99	Developing Dynamic Field Theory Architectures for Embodied Cognitive Systems with cedar. Frontiers in Neurorobotics, 2016, 10, 14.	1.6	17
100	Coordination of muscle torques stabilizes upright standing posture: an UCM analysis. Experimental Brain Research, 2016, 234, 1757-1767.	0.7	17
101	Functional Synergies Underlying Control of Upright Posture during Changes in Head Orientation. PLoS ONE, 2012, 7, e41583.	1.1	17
102	Evoked oscillatory cortical responses are dynamically coupled to peripheral stimuli. NeuroReport, 1992, 3, 579-582.	0.6	15
103	Dynamics parametrically controlled by image correlations organize robot navigation. Biological Cybernetics, 1996, 75, 293-307.	0.6	15
104	Autonomous Sequence Generation for a Neural Dynamic Robot: Scene Perception, Serial Order, and Object-Oriented Movement. Frontiers in Neurorobotics, 2019, 13, 95.	1.6	15
105	The Dynamics of Neural Populations Capture the Laws of the Mind. Topics in Cognitive Science, 2020, 12, 1257-1271.	1.1	15
106	Swing it to the left, swing it to the right: enacting flexible spatial language using a neurodynamic framework. Cognitive Neurodynamics, 2009, 3, 373-400.	2.3	14
107	Generating collision free reaching movements for redundant manipulators using dynamical systems. , 2010, , .		14
108	Measuring Perceptual Hysteresis with the Modified Method of Limits: Dynamics at the Threshold. Seeing and Perceiving, 2010, 23, 173-195.	0.4	14

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109	How visual information links to multijoint coordination during quiet standing. Experimental Brain Research, 2012, 222, 229-239.	0.7	14
110	Separating Timing, Movement Conditions and Individual Differences in the Analysis of Human Movement. PLoS Computational Biology, 2016, 12, e1005092.	1.5	13
111	A neuro-dynamic architecture for one shot learning of objects that uses both bottom-up recognition and top-down prediction. , 2009, , .		12
112	Dynamic properties of cortical evoked (10 Hz) oscillations: theory and experiment. Biological Cybernetics, 1993, 69, 463-473.	0.6	11
113	Dynamic field theory of sequential action: A model and its implementation on an embodied agent. , 2008, , .		11
114	Naturalistic arm movements during obstacle avoidance in 3D and the identification of movement primitives. Experimental Brain Research, 2012, 222, 185-200.	0.7	11
115	Neural dynamics parametrically controlled by image correlations organize robot navigation. , 1995, , 177-180.		11
116	Self-organized pattern formation: experimental dissection of motion detection and motion integration by variation of attentional spread. Vision Research, 2002, 42, 991-1003.	0.7	10
117	Natural human-robot interaction through spatial language: A Dynamic Neural Field approach. , 2010, , .		10
118	A Neural Dynamic Model Generates Descriptions of Objectâ€Oriented Actions. Topics in Cognitive Science, 2017, 9, 35-47.	1.1	10
119	A Neural-Dynamic Architecture for Concurrent Estimation of Object Pose and Identity. Frontiers in Neurorobotics, 2017, 11, 23.	1.6	10
120	How infants' reaches reveal principles of sensorimotor decision making. Connection Science, 2018, 30, 53-80.	1.8	10
121	Reaching for Objects. , 2018, , 281-318.		10
122	Serial order in an acting system: A multidimensional dynamic neural fields implementation. , 2010, , .		9
123	Task-specific stability of abundant systems: Structure of variance and motor equivalence. Neuroscience, 2015, 310, 600-615.	1.1	9
124	Scene memory and spatial inhibition in visual search. Attention, Perception, and Psychophysics, 2020, 82, 775-798.	0.7	9
125	Integrating â€œWhatâ€• and â€œWhereâ€•, 2015, , 197-226.		9
126	Computer mouse tracking reveals motor signatures in a cognitive task of spatial language grounding. Attention, Perception, and Psychophysics, 2019, 81, 2424-2460.	0.7	8

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127	A Software Framework for Cognition, Embodiment, Dynamics, and Autonomy in Robotics: Cedar. Lecture Notes in Computer Science, 2013, , 475-482.	1.0	8
128	Linking dynamical perceptual decisions at different levels of description in motion pattern formation: Computational simulations. Perception & Psychophysics, 2006, 68, 515-533.	2.3	7
129	Change occurs when body meets environment: A review of the embodied nature of development. Japanese Psychological Research, 2014, 56, 385-401.	0.4	7
130	A Dynamic Field Architecture for the Generation of Hierarchically Organized Sequences. Lecture Notes in Computer Science, 2012, , 25-32.	1.0	7
131	A neuromuscular model of human locomotion combines spinal reflex circuits with voluntary movements. Scientific Reports, 2022, 12, 8189.	1.6	7
132	So what's a modeler to do?. Behavioral and Brain Sciences, 2001, 24, 70-80.	0.4	6
133	Temporal stabilization of discrete movement in variable environments: An attractor dynamics approach. , 2009, , .		6
134	Making a robotic scene representation accessible to feature and label queries. , 2011, , .		6
135	Carry-over coarticulation in joint angles. Experimental Brain Research, 2015, 233, 2555-2569.	0.7	6
136	Dynamic Neural Fields with Intrinsic Plasticity. Frontiers in Computational Neuroscience, 2017, 11, 74.	1.2	6
137	How do neural processes give rise to cognition? Simultaneously predicting brain and behavior with a dynamic model of visual working memory.. Psychological Review, 2021, 128, 362-395.	2.7	6
138	Parsing of action sequences: A neural dynamics approach. Paladyn, 2015, 6, .	1.9	6
139	A Neural Approach to Cognition Based on Dynamic Field Theory. , 2014, , 319-339.		6
140	The neural dynamics of goal-directed arm movements: A developmental perspective. , 2015, , .		5
141	Dynamic Field Theory and Embodied Communication. , 2008, , 260-278.		5
142	Integrating orientation constraints into the attractor dynamics approach for autonomous manipulation. , 2010, , .		4
143	Scenes and tracking with dynamic neural fields: How to update a robotic scene representation. , 2010, , .		4
144	Autonomous Robot Hitting Task Using Dynamical System Approach. , 2013, , .		4

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145	The dynamics of neural activation variables. Paladyn, 2015, 6, .	1.9	4
146	Nonlinear dynamics in the perceptual grouping of connected surfaces. Vision Research, 2016, 126, 80-96.	0.7	4
147	Anticipatory coarticulation in non-speeded arm movements can be motor-equivalent, carry-over coarticulation always is. Experimental Brain Research, 2018, 236, 1293-1307.	0.7	4
148	A Neural Basis for Perceptual Dynamics. Studies in Computational Intelligence, 2010, , 151-177.	0.7	4
149	A novel technology for investigating the dynamics of infant perseverative reaching. Behavior Research Methods, 2007, 39, 911-919.	2.3	3
150	Reaching and grasping novel objects: Using neural dynamics to integrate and organize scene and object perception with movement generation. , 2014, , .		3
151	A neural process model of learning to sequentially organize and activate pre-reaches. , 2016, , .		3
152	A Neural Dynamic Model of the Perceptual Grounding of Spatial and Movement Relations. Cognitive Science, 2021, 45, e13045.	0.8	3
153	Habituation and Dishabituation in Motor Behavior: Experiment and Neural Dynamic Model. Frontiers in Psychology, 2022, 13, 717669.	1.1	3
154	Learning objects on the fly - object recognition for the here and now. , 2010, , .		2
155	A neural-dynamic architecture for flexible spatial language: Intrinsic frames, the term “between”, and autonomy. , 2012, , .		2
156	Autonomous reinforcement of behavioral sequences in neural dynamics. , 2012, , .		2
157	A neural dynamics architecture for grasping that integrates perception and movement generation and enables on-line updating. , 2014, , .		2
158	A Neural Dynamic Network Drives an Intentional Agent That Autonomously Learns Beliefs in Continuous Time. IEEE Transactions on Cognitive and Developmental Systems, 2022, 14, 90-101.	2.6	2
159	Behaviorally Flexible Spatial Communication: Robotic Demonstrations of a Neurodynamic Framework. Lecture Notes in Computer Science, 2009, , 257-264.	1.0	2
160	Flawed kinematic models cannot provide insight into the nature of motor variability. Behavioral and Brain Sciences, 1997, 20, 314-315.	0.4	1
161	The temporal dynamics of global-to-local feedback in the formation of hierarchical motion patterns: psychophysics and computational simulations. Attention, Perception, and Psychophysics, 2011, 73, 1171-1194.	0.7	1
162	Dynamic Field Theory: Conceptual foundations and applications to neuronally inspired cognitive and developmental robotics. , 2014, , .		1

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163	Reinforcement and shaping in learning action sequences with neural dynamics. , 2014, , .		1
164	Reinforcement-Driven Shaping of Sequence Learning in Neural Dynamics. Lecture Notes in Computer Science, 2014, , 198-209.	1.0	1
165	Contrasting accounts of direction and shape perception in short-range motion: Counterchange compared with motion energy detection. Attention, Perception, and Psychophysics, 2014, 76, 1350-1370.	0.7	1
166	The sequential organization of movement is critical to the development of reaching: A neural dynamics account. , 2015, , .		1
167	Autonomously learning beliefs is facilitated by a neural dynamic network driving an intentional agent. , 2019, , .		1
168	Embodied Neural Dynamics. , 2015, , 95-118.		1
169	Group Report: Emergent Properties of Natural and Artificial Systems. Zeitschrift Fur Naturforschung - Section C Journal of Biosciences, 1998, 53, 770-774.	0.6	0
170	A neural dynamics to organize timed movement: Demonstration in a robot ball bouncing task. , 2014, , .		0
171	Embodied Cognition, Dynamic Field Theory of. , 2014, , 1-11.		0
172	What Can We Learn from Dynamic Models of Rhythmic Behavior in Animals and Humans?. Studies in Cognitive Systems, 2000, , 682-700.	0.1	0
173	Strukturen kognitiver Systeme. , 2013, , 153-219.		0
174	Coordination Dynamics. , 2014, , 1-3.		0
175	Dynamic Field Theory as the Interface Between Neuronal Dynamcis and Embodied Cognition. , 2008, , 169-173.		0
176	Motor Habituation: Theory and Experiment. , 2020, , .		0
177	Coordination Dynamics. , 2022, , 1021-1024.		0
178	Embodied Cognition, Dynamic Field Theory of. , 2022, , 1286-1294.		0