Petr Lansky

List of Publications by Year
in descending order

173 papers	3,276 citations	126907 33 h-index	214800 47 g-index
179 all docs	179 docs citations	179 times ranked	1679 citing authors

#	Article	IF	Citations
1	Competitive and Noncompetitive Odorant Interactions in the Early Neural Coding of Odorant Mixtures. Journal of Neuroscience, 2008, 28, 2659-2666.	3.6	153
2	Diffusion approximation of the neuronal model with synaptic reversal potentials. Biological Cybernetics, 1987, 56, 19-26.	1.3	96
3	On approximations of Stein's neuronal model. Journal of Theoretical Biology, 1984, 107, 631-647.	1.7	95
4	Properties of the extra-positional signal in hippocampal place cell discharge derived from the overdispersion in location-specific firing. Neuroscience, 2002, 111, 553-566.	2.3	82
5	A review of the methods for signal estimation in stochastic diffusion leaky integrate-and-fire neuronal models. Biological Cybernetics, 2008, 99, 253-262.	1.3	71
6	Estimation of the input parameters in the Ornstein-Uhlenbeck neuronal model. Physical Review E, 2005, 71, 011907.	2.1	67
7	REVIEW ARTICLE: Neuronal coding and spiking randomness. European Journal of Neuroscience, 2007, 26, 2693-2701.	2.6	66
8	On the comparison of Feller and Ornstein-Uhlenbeck models for neural activity. Biological Cybernetics, 1995, 73, 457-465.	1.3	65
9	Perireceptor and Receptor Events in Olfaction. Comparison of Concentration and Flux Detectors: a Modeling Study. Chemical Senses, 2000, 25, 293-311.	2.0	65
10	Spiking frequency versus odorant concentration in olfactory receptor neurons. BioSystems, 2000, 58, 133-141.	2.0	64
11	Relation between stimulus and response in frog olfactory receptor neurons in vivo. European Journal of Neuroscience, 2003, 18, 1135-1154.	2.6	64
12	Quantifying location-specific information in the discharge of rat hippocampal place cells. Journal of Neuroscience Methods, 2003, 127, 123-135.	2.5	61
13	Generalized Stein's model for anatomically complex neurons. BioSystems, 1991, 25, 179-191.	2.0	60
14	The Ornsteinâ€“Uhlenbeck neuronal model with signal-dependent noise. Physics Letters, Section A: General, Atomic and Solid State Physics, 2001, 285, 132-140.	2.1	60
15	The parameters of the stochastic leaky integrate-and-fire neuronal model. Journal of Computational Neuroscience, 2006, 21, 211-223.	1.0	57
16	Diffusion approximation and first-passage-time problem for a model neuron. Biological Cybernetics, 1988, 58, 387-404.	1.3	54
17	Sources of periodical force in noisy integrate-and-fire models of neuronal dynamics. Physical Review E, 1997, 55, 2040-2043.	2.1	54
18	The effect of a random initial value in neural first-passage-time models. Mathematical Biosciences, 1989, 93, 191-215.	1.9	53

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19	Single-Unit Analysis of the Spinal Dorsal Horn in Patients With Neuropathic Pain. Journal of Clinical Neurophysiology, 2003, 20, 143-150.	1.7	51
20	Synaptic Transmission in a Diffusion Model for Neural Activity. Journal of Theoretical Biology, 1994, 166, 393-406.	1.7	48
21	Inference for the diffusion models of neuronal activity. Mathematical Biosciences, 1983, 67, 247-260.	1.9	47
22	Mean Instantaneous Firing Frequency Is Always Higher Than the Firing Rate. Neural Computation, 2004, 16, 477-489.	2.2	47
23	Ornstein-Uhlenbeck model neuron revisited. Biological Cybernetics, 1995, 72, 397-406.	1.3	46
24	Coding of odor intensity in a steady-state deterministic model of an olfactory receptor neuron. Journal of Computational Neuroscience, 1996, 3, 51-72.	1.0	46
25	Spontaneous activity of first- and second-order neurons in the frog olfactory system. Brain Research, 1994, 662, 31-44.	2.2	44
26	Perspective analysis outcomes of selected tribodiagnostic data used as input for condition based maintenance. Reliability Engineering and System Safety, 2016, 145, 231-242.	8.9	43
27	Stochastic model neuron without resetting of dendritic potential: application to the olfactory system. Biological Cybernetics, 1993, 69, 283-294.	1.3	40
28	Efficient Olfactory Coding in the Pheromone Receptor Neuron of a Moth. PLoS Computational Biology, 2008, 4, e1000053.	3.2	40
29	Patterns of spontaneous activity in single rat olfactory receptor neurons are different in normally breathing and tracheotomized animals. Journal of Neurobiology, 2005, 65, 97-114.	3.6	39
30	Estimation of the input parameters in the Feller neuronal model. Physical Review E, 2006, 73, 061910.	2.1	38
31	Variable initial depolarization in Stein's neuronal model with synaptic reversal potentials. Biological Cybernetics, 1991, 64, 285-291.	1.3	35
32	Classification of Dissolution Profiles in Terms of Fractional Dissolution Rate and a Novel Measure of Heterogeneity. Journal of Pharmaceutical Sciences, 2003, 92, 1632-1647.	3.3	35
33	A review of the methods for neuronal response latency estimation. BioSystems, 2015, 136, 23-34.	2.0	34
34	Coding of odor intensity. BioSystems, 1993, 31, 15-38.	2.0	33
35	Estimation of the Individual Firing Frequencies of Two Neurons Recorded with a Single Electrode. Chemical Senses, 2003, 28, 671-679.	2.0	33
36	Statistical inference on spontaneous neuronal discharge patterns. Biological Cybernetics, 1987, 55, 299-311.	1.3	31

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37	Does the dose-solubility ratio affect the mean dissolution time of drugs?. Pharmaceutical Research, 1999, 16, 1470-1476.	3.5	31
38	On the Interspike Intervals Calculated from Diffusion Approximations of Stein's Neuronal Model with Reversal Potentials. Journal of Theoretical Biology, 1994, 171, 225-232.	1.7	30
39	Measures of statistical dispersion based on Shannon and Fisher information concepts. Information Sciences, 2013, 235, 214-223.	6.9	29
40	Estimation of Time-Dependent Input from Neuronal Membrane Potential. Neural Computation, 2011, 23, 3070-3093.	2.2	28
41	Two-compartment stochastic model of a neuron. Physica D: Nonlinear Phenomena, 1999, 132, 267-286.	2.8	27
42	Optimum signal in a simple neuronal model with signal-dependent noise. Biological Cybernetics, 2005, 92, 199-205.	1.3	25
43	Parameters of stochastic diffusion processes estimated from observations of first-hitting times: Application to the leaky integrate-and-fire neuronal model. Physical Review E, 2007, 76, 041906.	2.1	25
44	Metabolic cost of neuronal information in an empirical stimulus-response model. Biological Cybernetics, 2013, 107, 355-365.	1.3	25
45	Coding of periodic pulse stimulation in chemoreceptors. BioSystems, 2002, 67, 121-128.	2.0	24
46	Optimal Signal Estimation in Neuronal Models. Neural Computation, 2005, 17, 2240-2257.	2.2	22
47	First-passage-time problem for simulated stochastic diffusion processes. Computers in Biology and Medicine, 1994, 24, 91-101.	7.0	21
48	On the estimation of refractory period. Journal of Neuroscience Methods, 2008, 171, 288-295.	2.5	20
49	Parameters of the Diffusion Leaky Integrate-and-Fire Neuronal Model for a Slowly Fluctuating Signal. Neural Computation, 2008, 20, 2696-2714.	2.2	20
50	On two diffusion neuronal models with multiplicative noise: The mean first-passage time properties. Chaos, 2018, 28, 043103.	2.5	20
51	Long-Term Potentiation and Depression Induced by a Stochastic Conditioning of a Model Synapse. Biophysical Journal, 1999, 77, 1234-1243.	0.5	19
52	Similarity of interspike interval distributions and information gain in a stationary neuronal firing. Biological Cybernetics, 2006, 94, 157-167.	1.3	19
53	Fano factor estimation. Mathematical Biosciences and Engineering, 2014, 11, 105-123.	1.9	18
54	Coding of stimulus intensity in an olfactory receptor neuron: Role of neuron spatial extent and passive dendritic backpropagation of action potentials. Bulletin of Mathematical Biology, 1996, 58, 493-512.	1.9	17

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55	Optimal signal in sensory neurons under an extended rate coding concept. BioSystems, 2007, 89, 10-15.	2.0	17
56	Firing Variability Is Higher than Deduced from the Empirical Coefficient of Variation. Neural Computation, 2011, 23, 1944-1966.	2.2	17
57	Modeling heterogeneity of properties and random effects in drug dissolution. , 2001, 18, 1061-1067.		16
58	A stochastic differential equation model for drug dissolution and its parameters. Journal of Controlled Release, 2004, 100, 267-274.	9.9	16
59	The Gamma renewal process as an output of the diffusion leaky integrate-and-fire neuronal model. Biological Cybernetics, 2016, 110, 193-200.	1.3	16
60	Fano Factor: A Potentially Useful Information. Frontiers in Computational Neuroscience, 2020, 14, 569049.	2.1	16
61	Wiener filtration versus averaging of evoked responses. Biological Cybernetics, 1977, 27, 147-154.	1.3	15
62	Following complex rhythmical acoustical patterns by tapping. International Journal of Psychophysiology, 1987, 5, 187-192.	1.0	15
63	Stochastic model of the overdispersion in the place cell discharge. BioSystems, 2000, 58, 27-32.	2.0	15
64	Classification of stationary neuronal activity according to its information rate. Network: Computation in Neural Systems, 2006, 17, 193-210.	3.6	15
65	Parameters of Spike Trains Observed in a Short Time Window. Neural Computation, 2008, 20, 1325-1343.	2.2	15
66	Statistics of inverse interspike intervals: The instantaneous firing rate revisited. Chaos, 2018, 28, 106305.	2.5	15
67	Errors in Estimating the Orientation of Dot Patterns. Perception, 1989, 18, 237-242.	1.2	14
68	Estimating input parameters from intracellular recordings in the Feller neuronal model. Physical Review E, 2010, 81, 031916.	2.1	14
69	On the simulation of biological diffusion processes. Computers in Biology and Medicine, 1997, 27, 1-7.	7.0	13
70	Coding of odour intensity in a sensory neuron. BioSystems, 1997, 40, 203-210.	2.0	13
71	Odorant concentration and receptor potential in olfactory sensory neurons. BioSystems, 1998, 48, 131-138.	2.0	13
72	Receptor Dissociation Constants and the Information Entropy of Membranes Coding Ligand Concentration. Chemical Senses, 2001, 26, 95-104.	2.0	13

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73	Proposed mechanisms for coincidence detection in the auditory brainstem. Biological Cybernetics, 2005, 92, 445-451.	1.3	13
74	Information capacity and its approximations under metabolic cost in a simple homogeneous population of neurons. BioSystems, 2013, 112, 265-275.	2.0	13
75	Entropy factor for randomness quantification in neuronal data. Neural Networks, 2017, 95, 57-65.	5.9	13
76	The spatial properties of a model neuron increase its coding range. Biological Cybernetics, 1999, 81, 161-167.	1.3	12
77	Extracellular Transduction Events Under Pulsed Stimulation in Moth Olfactory Sensilla. Chemical Senses, 2003, 28, 509-522.	2.0	12
78	First-Spike Latency in the Presence of Spontaneous Activity. Neural Computation, 2010, 22, 1675-1697.	2.2	12
79	Variability Measures of Positive Random Variables. PLoS ONE, 2011, 6, e21998.	2.5	12
80	The Jacobi diffusion process as a neuronal model. Chaos, 2018, 28, 103119.	2.5	12
81	A reliability application of a mixture of inverse gaussian distributions. Applied Stochastic Models and Data Analysis, 1994, 10, 61-69.	0.4	11
82	A stochastic model for circulatory transport in pharmocokinetics. Mathematical Biosciences, 1996, 132, 141-167.	1.9	11
83	Ligand-receptor interaction under periodic stimulation: a modeling study of concentration chemoreceptors. European Biophysics Journal, 2001, 30, 110-120.	2.2	11
84	The overdispersion in activity of place cells. Neurocomputing, 2001, 38-40, 1393-1399.	5.9	11
85	Optimum signal in a diffusion leaky integrate-and-fire neuronal model. Mathematical Biosciences, 2007, 207, 261-274.	1.9	11
86	Randomness and variability of the neuronal activity described by the Ornsteinâ€"Uhlenbeck model. Network: Computation in Neural Systems, 2007, 18, 63-75.	3.6	11
87	The role of detachment of in-links in scale-free networks. Journal of Physics A: Mathematical and Theoretical, 2014, 47, 345002.	2.1	11
88	On visual orientation of dot patterns. Biological Cybernetics, 1987, 56, 389-396.	1.3	10
89	Area Perception in Simple Geometrical Figures. Perceptual and Motor Skills, 1990, 71, 459-466.	1.3	10
90	Receptor Heterogeneity and its Effect on Sensitivity and Coding Range in Olfactory Sensory Neurons. Bulletin of Mathematical Biology, 2001, 63, 885-908.	1.9	10

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91	Classification of stimuli based on stimulusâ€"response curves and their variability. Brain Research, 2008, 1225, 57-66.	2.2	10
92	Random effects in drug dissolution. European Journal of Pharmaceutical Sciences, 2010, 41, 430-439.	4.0	10
93	Identification of noisy response latency. Physical Review E, 2012, 86, 021128.	2.1	10
94	EEG alpha and non-alpha intervals alternation. Biological Cybernetics, 1978, 30, 109-113.	1.3	9
95	Basic mechanisms of coding stimulus intensity in the olfactory sensory neuron. Neural Processing Letters, 1994, 1, 9-12.	3.2	9
96	Statistical approach in search for optimal signal in simple olfactory neuronal models. Mathematical Biosciences, 2008, 214, 100-108.	1.9	9
97	Errors in estimation of the input signal for integrate-and-fire neuronal models. Physical Review E, 2008, 78, 011918.	2.1	9
98	Generalized Nonlinear Yule Models. Journal of Statistical Physics, 2016, 165, 661-679.	1.2	9
99	Simulation of a diffusion process with randomly distributed jumps in neuronal context. International Journal of Bio-medical Computing, 1992, 31, 233-245.	0.5	8
100	Time-Dependent Solutions for a Cable Model of an Olfactory Receptor Neuron. Journal of Theoretical Biology, 1996, 181, 25-31.	1.7	8
101	Effect of spatial extension on noise-enhanced phase locking in a leaky integrate-and-fire model of a neuron. Physical Review E, 2000, 62, 8427-8437.	2.1	8
102	Effect of stimulation on the input parameters of stochastic leaky integrate-and-fire neuronal model. Journal of Physiology (Paris), 2010, 104, 160-166.	2.1	8
103	Information transfer for small-amplitude signals. Physical Review E, 2010, 81, 050901.	2.1	8
104	Performance breakdown in optimal stimulus decoding. Journal of Neural Engineering, 2015, 12, 036012.	3.5	8
105	Inhibition enhances the coherence in the Jacobi neuronal model. Chaos, Solitons and Fractals, 2019, 128, 108-113.	5.1	8
106	Qualitative properties of different numerical methods for the inhomogeneous geometric Brownian motion. Journal of Computational and Applied Mathematics, 2022, 406, 113951.	2.0	8
107	An indirect method for absorption rate estimation: Flurothyl-induced seizures. Bulletin of Mathematical Biology, 1997, 59, 569-579.	1.9	7
108	Input parameters in a one-dimensional neuronal model with reversal potentials. BioSystems, 1998, 48, 123-129.	2.0	7

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109	Parametric inference of neuronal response latency in presence of a background signal. BioSystems, 2013, 112, 249-257.	2.0	7
110	Parameter inference from hitting times for perturbed Brownian motion. Lifetime Data Analysis, 2015, 21, 331-352.	0.9	7
111	Alpha detection. Biofeedback and Self-regulation, 1979, 4, 127-131.	0.2	6
112	An integral measure of the coherence function between pairs of EEG recordings. Electroencephalography and Clinical Neurophysiology, 1982, 54, 587-590.	0.3	6
113	A model of the perception of area. Spatial Vision, 1992, 6, 101-116.	1.4	6
114	Effects of afterhyperpolarization on neuronal firing. BioSystems, 1992, 27, 25-38.	2.0	6
115	Interspike interval statistics in the Ornsteinâ€"Uhlenbeck neuronal model with signal-dependent noise. BioSystems, 2002, 67, 213-219.	2.0	6
116	INFORMATION CONTENT IN THRESHOLD DATA WITH NON-GAUSSIAN NOISE. Fluctuation and Noise Letters, 2007, 07, L79-L89.	1.5	6
117	Only through perturbation can relaxation times be estimated. Physical Review E, 2012, 86, 050102.	2.1	6
118	Coding Accuracy Is Not Fully Determined by the Neuronal Model. Neural Computation, 2015, 27, 1051-1057.	2.2	6
119	Accuracy of rate coding: When shorter time window and higher spontaneous activity help. Physical Review E, 2017, 95, 022310.	2.1	6
120	Shot noise, weak convergence and diffusion approximations. Physica D: Nonlinear Phenomena, 2021, 418, 132845.	2.8	6
121	A generalization of the Yule-Simon model, with special reference to word association tests and neural cell assembly formation. Journal of Mathematical Psychology, 1980, 21, 53-65.	1.8	5
122	Models for the perception of orientation in random dot patterns. Biological Cybernetics, 1990, 63, 71-80.	1.3	5
123	A NEURONAL MODEL WITH VARIABLE SYNAPTIC INPUT EFFECT. Cybernetics and Systems, 1992, 23, 29-40.	2.5	5
124	Computational model of the effects of stochastic conditioning on the induction of long-term potentiation and depression. Biological Cybernetics, 1999, 81, 291-298.	1.3	5
125	On the location-specific positional and extra-positional information in the discharge of rat hippocampal cells. BioSystems, 2002, 67, 167-175.	2.0	5
126	Stochastic pulse stimulation in chemoreceptors and its properties. Mathematical Biosciences, 2004, 188, 133-145.	1.9	5

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127	Variability and randomness in stationary neuronal activity. BioSystems, 2007, 89, 44-49.	2.0	5
128	Comparison of Statistical Methods for Estimation of the Input Parameters in the Ornstein-Uhlenbeck Neuronal Model from First-Passage Times Data. AIP Conference Proceedings, 2008, , .	0.4	5
129	Responses of single neurons and neuronal ensembles in frog first- and second-order olfactory neurons. Brain Research, 2013, 1536, 144-158.	2.2	5
130	Estimating latency from inhibitory input. Biological Cybernetics, 2014, 108, 475-493.	1.3	5
131	Steinâ€™s neuronal model with pooled renewal input. Biological Cybernetics, 2015, 109, 389-399.	1.3	5
132	Presynaptic Spontaneous Activity Enhances the Accuracy of Latency Coding. Neural Computation, 2016, 28, 2162-2180.	2.2	5
133	Transient dynamics of Pearson diffusions facilitates estimation of rate parameters. Communications in Nonlinear Science and Numerical Simulation, 2020, 82, 105034.	3.3	5
134	Cycle-time and residence-time density approximations in a stochastic model for circulatory transport. Bulletin of Mathematical Biology, 1997, 59, 1-22.	1.9	4
135	Characterizing and modeling concentration-response curves of olfactory receptor cells. Neurocomputing, 2001, 38-40, 319-325.	5.9	4
136	Role of heterogeneity in deterministic models of drug dissolution and their statistical characteristics. BioSystems, 2003, 71, 123-131.	2.0	4
137	Distribution of interspike intervals estimated from multiple spike trains observed in a short time window. Physical Review E, 2011, 83, 011910.	2.1	4
138	Estimation of the synaptic input firing rates and characterization of the stimulation effects in an auditory neuron. Frontiers in Computational Neuroscience, 2015, 9, 59.	2.1	4
139	Altered intensity coding in the salicylate-overdose animal model of tinnitus. BioSystems, 2015, 136, 113-119.	2.0	4
140	Ornstein-Uhlenbeck model neuron revisited. Biological Cybernetics, 1995, 72, 397-406.	1.3	4
141	On the comparison of Feller and Ornstein?Uhlenbeck models for neural activity. Biological Cybernetics, 1995, 73, 457-465.	1.3	4
142	A stochastic model for neuronal bursting. BioSystems, 1994, 33, 1-16.	2.0	3
143	PERCEPTION OF AREA OF INTERPOLATED FIGURES. Cybernetics and Systems, 1994, 25, 567-579.	2.5	3
144	Cycle-time and residence-time density approximations in a stochastic model for circulatory transport. Bulletin of Mathematical Biology, 1997, 59, 1-22.	1.9	3

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145	The MÃ¼ller-Lyer Illusion in Interpolated Figures. Perceptual and Motor Skills, 1998, 87, 499-504.	1.3	3
146	Preface. BioSystems, 2000, 58, 1.	2.0	3
147	A simple stochastic model of spatially complex neurons. BioSystems, 2000, 58, 49-58.	2.0	3
148	Vesicular mechanisms and estimates of firing probability in a network of spiking neurons. Physica D: Nonlinear Phenomena, 2003, 181, 132-145.	2.8	3
149	Shot-noise Fano factor. Physical Review E, 2015, 92, 052135.	2.1	3
150	Encoding of pheromone intensity by dynamic activation of pheromone receptors. Neurocomputing, 2007, 70, 1759-1763.	5.9	2
151	Homogeneous diffusion layer model of dissolution incorporating the initial transient phase. International Journal of Pharmaceutics, 2011, 416, 35-42.	5.2	2
152	Population coding is essential for rapid information processing in the moth antennal lobe. Brain Research, 2013, 1536, 88-96.	2.2	2
153	Sampling times influence the estimate of parameters in the Weibull dissolution model. European Journal of Pharmaceutical Sciences, 2015, 78, 171-176.	4.0	2
154	A single spike deteriorates synaptic conductance estimation. BioSystems, 2017, 161, 41-45.	2.0	2
155	Average evoked brain potential comparison on the basis of spectral and coherency functions. Biological Cybernetics, 1976, 24, 103-110.	1.3	1
156	A computer program to study the area perception of squares and rectangles. Computer Methods and Programs in Biomedicine, 1994, 42, 263-270.	4.7	1
157	On the estimate of the rate constant in the homogeneous dissolution model. Drug Development and Industrial Pharmacy, 2013, 39, 1555-1561.	2.0	1
158	Coding accuracy on the psychophysical scale. Scientific Reports, 2016, 6, 23810.	3.3	1
159	Two-compartment stochastic model of a neuron with periodic input. Lecture Notes in Computer Science, 1999, , 240-247.	1.3	1
160	Noise in integrate-and-fire models of neuronal dynamics. Lecture Notes in Computer Science, 1997, , 49-54.	1.3	0
161	Overdispersion in the Place Cell Dischargeâ€”Stochastic Modelling and Inference. AIP Conference Proceedings, 2008, , .	0.4	0
162	The Adaptation of the Moth Pheromone Receptor Neuron to its Natural Stimulus. AIP Conference Proceedings, 2008, , .	0.4	0

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163	Optimal odor intensity in olfactory neuronal models. BMC Neuroscience, 2009, 10, .	1.9	0
164	Simple stochastic neuronal models and their parameters. BMC Neuroscience, 2009, 10, .	1.9	0
165	Measures of statistical dispersion based on Entropy and Fisher information. BMC Neuroscience, 2011, 12, .	1.9	0
166	Estimating individual firing frequencies in a multiple spike train record. Journal of Neuroscience Methods, 2012, 211, 191-202.	2.5	0
167	Latency of inhibitory response. BMC Neuroscience, 2013, 14, .	1.9	0
168	Multidimensional counting processes and evoked neuronal activity. IMA Journal of Mathematical Control and Information, 2000, 17, 53-73.	1.7	0
169	Modelling Odor Intensity and Odor Quality Coding in Olfactory Systems. , 1996, , 217-231.		0
170	On Recent Results in Modeling of Sensory Neurons. , 1998, , 89-99.		0
171	Stochastic model of the place cell discharge. Lecture Notes in Computer Science, 1999, , 248-257.	1.3	0
172	Preface. Mathematical Biosciences and Engineering, 2016, 13, i-i.	1.9	0
173	Steady-State Properties of Coding ofÂOdor Intensity inÂOlfactory Sensory Neurons. , 2007, , 360-367.		0