Henry C Tuckwell

List of Publications by Year
in descending order

95 papers	2,957 citations	218662 26 h-index	276858 41 g-index
105 all docs	105 docs citations	105 times ranked	1712 citing authors

#	Article	IF	Citations
1	A Stochastic Model for Early HIV-1 Population Dynamics. Journal of Theoretical Biology, 1998, 195, 451-463.	1.7	103
2	Persistence times of populations with large random fluctuations. Theoretical Population Biology, 1978, 14, 46-61.	1.1	91
3	Synaptic transmission in a model for stochastic neural activity. Journal of Theoretical Biology, 1979, 77, 65-81.	1.7	86
4	Logistic growth with random density independent disasters. Theoretical Population Biology, 1981, 19, 1-18.	1.1	84
5	Some properties of a simple stochastic epidemic model of SIR type. Mathematical Biosciences, 2007, 208, 76-97.	1.9	81
6	Neuronal interspike time distributions and the estimation of neurophysiological and neuroanatomical parameters. Journal of Theoretical Biology, 1978, 71, 167-183.	1.7	77
7	Statistical properties of stochastic nonlinear dynamical models of single spiking neurons and neural networks. Physical Review E, 1996, 54, 5585-5590.	2.1	70
8	Inhibition of rhythmic neural spiking by noise: the occurrence of a minimum in activity with increasing noise. Die Naturwissenschaften, 2009, 96, 1091-1097.	1.6	69
9	On the first-exit time problem for temporally homogeneous Markov processes. Journal of Applied Probability, 1976, 13, 39-48.	0.7	65
10	Analytical and simulation results for stochastic Fitzhugh-Nagumo neurons and neural networks. Journal of Computational Neuroscience, 1998, 5, 91-113.	1.0	63
11	Inhibition and modulation of rhythmic neuronal spiking by noise. Physical Review E, 2009, 80, 031907.	2.1	56
12	First-passage time of Markov processes to moving barriers. Journal of Applied Probability, 1984, 21, 695-709.	0.7	48
13	On the behavior of solutions in viral dynamical models. BioSystems, 2004, 73, 157-161.	2.0	48
14	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
15	Accuracy of neuronal interspike times calculated from a diffusion approximation. Journal of Theoretical Biology, 1980, 83, 377-387.	1.7	45
16	A spatial stochastic neuronal model with Ornstein-Uhlenbeck input current. Biological Cybernetics, 2002, 86, 137-145.	1.3	40
17	Quantitative aspects of L-type Ca2+ currents. Progress in Neurobiology, 2012, 96, 1-31.	5.7	40
18	Determination of Firing Times for the Stochastic Fitzhugh-Nagumo Neuronal Model. Neural Computation, 2003, 15, 143-159.	2.2	36

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19	The probability of HIV infection in a new host and its reduction with microbicides. Mathematical Biosciences, 2008, 214, 81-86.	1.9	35
20	Determination of the inter-spike times of neurons receiving randomly arriving post-synaptik potentials. Biological Cybernetics, 1975, 18, 225-237.	1.3	34
21	Time to first spike in stochastic Hodgkinâ€“Huxley systems. Physica A: Statistical Mechanics and Its Applications, 2005, 351, 427-438.	2.6	34
22	Firing rates of neurons with random excitation and inhibition. Journal of Theoretical Biology, 1979, 80, 1-14.	1.7	32
23	Analysis of inverse stochastic resonance and the long-term firing of Hodgkinâ€“Huxley neurons with Gaussian white noise. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 5311-5325.	2.6	32
24	Random currents through nerve membranes. Biological Cybernetics, 1983, 49, 99-110.	1.3	31
25	Spatial epidemic network models with viral dynamics. Physical Review E, 1998, 57, 2163-2169.	2.1	30
26	Nature of equilibria and effects of drug treatments in some simple viral population dynamical models. Mathematical Medicine and Biology, 2000, 17, 311-327.	1.2	28
27	The effects of various spatial distributions of weak noise on rhythmic spiking. Journal of Computational Neuroscience, 2011, 30, 361-371.	1.0	28
28	Weak Noise in Neurons May Powerfully Inhibit the Generation of Repetitive Spiking but Not Its Propagation. PLoS Computational Biology, 2010, 6, e1000794.	3.2	26
29	The interspike interval of a cable model neuron with white noise input. Biological Cybernetics, 1984, 49, 155-167.	1.3	25
30	Noisy spiking neurons and networks: useful approximations for firing probabilities and global behavior. BioSystems, 1998, 48, 187-194.	2.0	25
31	The response of a spatially distributed neuron to white noise current injection. Biological Cybernetics, 1979, 33, 39-55.	1.3	24
32	Moment analysis of the Hodgkinâ€“Huxley system with additive noise. Physica A: Statistical Mechanics and Its Applications, 2009, 388, 4115-4125.	2.6	23
33	A Meta-Analysis of Homovanillic Acid Concentrations in Schizophrenia. International Journal of Neuroscience, 1993, 73, 109-114.	1.6	21
34	Analytical and Simulation Results for the Stochastic Spatial Fitzhugh-Nagumo Model Neuron. Neural Computation, 2008, 20, 3003-3033.	2.2	21
35	Analysis and estimation of synaptic densities and their spatial variation on the motoneuron surface. Brain Research, 1978, 150, 617-624.	2.2	20
36	Predictions and Properties of a Model of Potassium and Calcium Ion Movements During Spreading Cortical Depression. International Journal of Neuroscience, 1980, 10, 145-164.	1.6	20

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37	Simplified Reaction-Diffusion Equations for Potassium and Calcium Ion Concentrations During Spreading Cortical Depression. International Journal of Neuroscience, 1981, 12, 95-107.	1.6	18
38	Diffusion approximations to channel noise. Journal of Theoretical Biology, 1987, 127, 427-438.	1.7	18
39	A review of methods for identifying stochastic resonance in simulations of single neuron models. Network: Computation in Neural Systems, 2015, 26, 35-71.	3.6	18
40	The effects of random selection on gene frequency. Mathematical Biosciences, 1976, 30, 113-128.	1.9	17
41	Ion and Transmitter Movements During Spreading Cortical Depression. International Journal of Neuroscience, 1981, 12, 109-135.	1.6	17
42	Random perturbations of the reduced Fitzhugh-Nagumo equation. Physica Scripta, 1992, 46, 481-484.	2.5	16
43	Recurrent inhibition and afterhyperpolarization: Effects on neuronal discharge. Biological Cybernetics, 1978, 30, 115-123.	1.3	15
44	Logistic population growth under random dispersal. Bulletin of Mathematical Biology, 1987, 49, 495-506.	1.9	15
45	On the concentration of 5-hydroxyindoleacetic acid in schizophrenia: A meta-analysis. Psychiatry Research, 1996, 59, 239-244.	3.3	15
46	Computational modeling of spike generation in serotonergic neurons of the dorsal raphe nucleus. Progress in Neurobiology, 2014, 118, 59-101.	5.7	15
47	Random perturbations of spiking activity in a pair of coupled neurons. Theory in Biosciences, 2008, 127, 135-139.	1.4	14
48	On the simulation of biological diffusion processes. Computers in Biology and Medicine, 1997, 27, 1-7.	7.0	13
49	Evidence of Soliton-Like Behavior of Solitary Waves in a Nonlinear Reaction-Diffusion System. SIAM Journal on Applied Mathematics, 1980, 39, 310-322.	1.8	12
50	Repeating triplets of spikes and oscillations in the mitral cell discharges of freely breathing rats. European Journal of Neuroscience, 1999, 11, 3185-3193.	2.6	12
51	Frequency of firing of Stein's model neuron with application to cells of the dorsal spinocerebellar tract. Brain Research, 1976, 116, 323-328.	2.2	10
52	On stochastic models of the activity of single neurons. Journal of Theoretical Biology, 1977, 65, 783-785.	1.7	10
53	Firing properties of a stochastic PDE model of a rat sensory cortex layer 2/3 pyramidal cell. Mathematical Biosciences, 2004, 188, 117-132.	1.9	10
54	Enhancement of epidemic spread by noise and stochastic resonance in spatial network models with viral dynamics. Physical Review E, 2000, 61, 5611-5619.	2.1	9

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55	Spatial neuron model with two-parameter Ornsteinâ€“Uhlenbeck input current. Physica A: Statistical Mechanics and Its Applications, 2006, 368, 495-510.	2.6	9
56	Dynamical modeling of viral spread in spatially distributed populations: stochastic origins of oscillations and density dependence. BioSystems, 2007, 90, 546-559.	2.0	9
57	First-passage time of Markov processes to moving barriers. Journal of Applied Probability, 1984, 21, 695-709.	0.7	9
58	The response of a nerve cylinder to spatially distributed white noise inputs. Journal of Theoretical Biology, 1980, 87, 275-295.	1.7	8
59	Statistical properties of perturbative nonlinear random diffusion from stochastic integral representations. Physics Letters, Section A: General, Atomic and Solid State Physics, 1987, 122, 117-120.	2.1	8
60	A Weighted Nonparametric Procedure for the Combination of Independent Events. Biometrical Journal, 1994, 36, 1005-1012.	1.0	8
61	Time-Dependent Solutions for a Cable Model of an Olfactory Receptor Neuron. Journal of Theoretical Biology, 1996, 181, 25-31.	1.7	8
62	Epidemic spread and bifurcation effects in two-dimensional network models with viral dynamics. Physical Review E, 2001, 64, 041918.	2.1	8
63	Cortical network modeling: Analytical methods for firing rates and some properties of networks of LIF neurons. Journal of Physiology (Paris), 2006, 100, 88-99.	2.1	8
64	Mathematical Modeling of Spreading Cortical Depression: Spiral and Reverberating Waves. AIP Conference Proceedings, 2008, , .	0.4	8
65	Stochastic Partial Differential Equations in Neurobiology: Linear and Nonlinear Models for Spiking Neurons. Lecture Notes in Mathematics, 2013, , 149-173.	0.2	8
66	World population. Nature, 1992, 359, 200-200.	27.8	7
67	Properties of IA in a neuron of the dorsal raphe nucleus. Brain Research, 2012, 1449, 60-68.	2.2	7
68	Biophysical properties and computational modeling of calcium spikes in serotonergic neurons of the dorsal raphe nucleus. BioSystems, 2013, 112, 204-213.	2.0	7
69	Poisson Processes in Biology. Springer Series in Synergetics, 1981, , 162-171.	0.4	6
70	The Space-Clamped Hodgkin-Huxley System with Random Synaptic Input: Inhibition of Spiking by Weak Noise and Analysis with Moment Equations. Neural Computation, 2016, 28, 2129-2161.	2.2	6
71	Numerical solutions of some stochastic hyperbolic wave equations including sine-Gordon equation. Wave Motion, 2016, 65, 130-146.	2.0	6
72	A Neurophysiological Theory of a Reproductive Process. International Journal of Neuroscience, 1989, 44, 143-148.	1.6	5

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73	Analytical determination of firing times in stochastic nonlinear neural models. Neurocomputing, 2002, 48, 1003-1007.	5.9	5
74	Computation of spiking activity for a stochastic spatial neuron model: Effects of spatial distribution of input on bimodality and CV of the ISI distribution. Mathematical Biosciences, 2007, 207, 246-260.	1.9	5
75	Use of Green's function matrices for systems of diffusion equations. International Journal of Systems Science, 1988, 19, 1663-1666.	5.5	4
76	Perturbative analysis of random nonlinear reaction-diffusion systems. Physica Scripta, 1988, 37, 321-322.	2.5	4
77	Nonlinear effects in white-noise driven spatial diffusion: General analytical results and probabilities of exceeding threshold. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 1455-1463.	2.6	4
78	The analysis of stochastic neuronal activity. , 1988, , 191-246.		3
79	Random fluctuations at an equilibrium of a nonlinear reaction-diffusion equation. Applied Mathematics Letters, 1993, 6, 79-81.	2.7	3
80	Continuum models in neurobiology and information processing. BioSystems, 1998, 48, 223-228.	2.0	3
81	PREDICTING THE PROBABILITY OF PERSISTENCE OF HIV INFECTION WITH THE STANDARD MODEL. Journal of Biological Systems, 2011, 19, 747-762.	1.4	3
82	Population Growth with Large Random Fluctuations. Lecture Notes in Biomathematics, 1980, , 109-118.	0.3	3
83	Neuronal response to stochastic stimulation. IEEE Transactions on Systems, Man, and Cybernetics, 1984, SMC-14, 464-469.	0.9	2
84	SOME OPTIMAL STOCHASTIC CONTROL PROBLEMS IN NEUROSCIENCE â€" A REVIEW. Modern Physics Letters B, 2004, 18, 1067-1085.	1.9	2
85	Stochastic Modeling of Spreading Cortical Depression. Lecture Notes in Mathematics, 2013, , 187-200.	0.2	2
86	Nonlinear Random Reaction-Diffusion Systems. , 1988, , 581-590.		2
87	On the effect of random perturbations in a nonlinear system. Journal of Chemical Physics, 1992, 97, 7013-7014.	3.0	1
88	World and regional populations. BioSystems, 1993, 31, 59-63.	2.0	1
89	Cortical Potential Distributions and Information Processing. Neural Computation, 2000, 12, 2777-2795.	2.2	1
90	Mean Field Analysis of Large-Scale Interacting Populations of Stochastic Conductance-Based Spiking Neurons Using the Klimontovich Method. Journal of Statistical Physics, 2017, 166, 1310-1333.	1.2	1

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91	On Distributions of Physiological and Anatomical Variables in Pathological Conditions:Dopamine D2Receptors in Schizophrenia and Their Occupancies afterDrug Treatment. Journal of Theoretical Medicine, 2001, 3, 213-220.	0.5	0
92	On the possible use of ICA to identify synaptic inputs from observations of several neurons. Neurocomputing, 2005, 67, 450-455.	5.9	0
93	ON REACTION DYNAMICS AT DOPAMINE SYNAPSES. International Journal of Neuroscience, 2007, 117, 667-679.	1.6	0
94	Stochastic processes and an introduction to stochastic differential equations. , 1995, , 219-236.		0
95	Diffusion processes, stochastic differential equations and applications. , 1995, , 237-284.		0