William L Ditto

List of Publications by Year
in descending order

148	8,696	57758 44	43889 91
papers	citations	h-index	g-index

153	153	153	3821
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Negotiating the separatrix with machine learning. Nonlinear Theory and Its Applications IEICE, 2021, 12, 134-142.	0.6	3
2	Harnessing tipping points for logic operations. European Physical Journal: Special Topics, 2021, 230, 3403-3409.	2.6	5
3	Forecasting Hamiltonian dynamics without canonical coordinates. Nonlinear Dynamics, 2021, 103, 1553-1562.	5.2	21
4	The scaling of physics-informed machine learning with data and dimensions. Chaos, Solitons and Fractals: X, 2020, 5, 100046.	2.1	11
5	Closing editorial: Forecasting of epidemic spreading: lessons learned from the current covid-19 pandemic. Chaos, Solitons and Fractals, 2020, 139, 110278.	5.1	10
6	Physics-enhanced neural networks learn order and chaos. Physical Review E, 2020, 101, 062207.	2.1	42
7	Nonlinear dynamics based machine learning: Utilizing dynamics-based flexibility of nonlinear circuits to implement different functions. PLoS ONE, 2020, 15, e0228534.	2.5	9
8	Modeling and forecasting of epidemic spreading: The case of Covid-19 and beyond. Chaos, Solitons and Fractals, 2020, 135, 109794.	5.1	171
9	Nonlinear Computing and Nonlinear Artificial Intelligence. Understanding Complex Systems, 2019, , 44-53.	0.6	0
10	Chaotic attractor hopping yields logic operations. PLoS ONE, 2018, 13, e0209037.	2.5	17
11	Nonlinear dynamics as an engine of computation. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160222.	3.4	22
12	Present and the Future of Chaos Computing. Lecture Notes in Networks and Systems, 2017, , 101-109.	0.7	0
13	Dynamical coupling outperforms â€œmajority winsâ€•in organizing redundancy to mitigate noise. Nonlinear Dynamics, 2017, 87, 605-615.	5.2	0
14	Detecting and characterizing high-frequency oscillations in epilepsy: a case study of big data analysis. Royal Society Open Science, 2017, 4, 160741.	2.4	9
15	Implementing Boolean Functions in Hybrid Digital-Analog Systems. Physical Review Applied, 2017, 7, .	3.8	11
16	An Integrated Circuit Design for a Dynamics-Based Reconfigurable Logic Block. IEEE Transactions on Circuits and Systems II: Express Briefs, 2017, 64, 715-719.	3.0	27
17	Nonlinear Dynamics and Chaos for Fleixble, Reconfigurable Computing. , 2017, , .		0
18	Nonlinear dynamics-based adaptive hardware. , 2017, , .		2

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19	Spectral Scaling Analysis of RR Lyrae Stars in OGLE-IV Galactic Bulge Fields. Lecture Notes in Networks and Systems, 2017, , 65-76.	0.7	0
20	Superlinearly scalable noise robustness of redundant coupled dynamical systems. Physical Review E, 2016, 93, 032213.	2.1	4
21	A Simple Nonlinear Circuit Contains an Infinite Number of Functions. IEEE Transactions on Circuits and Systems II: Express Briefs, 2016, 63, 944-948.	3.0	28
22	Reduction of Additive Colored Noise Using Coupled Dynamics. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2016, 26, 1650005.	1.7	5
23	Role of network topology in noise reduction using coupled dynamics. Nonlinear Dynamics, 2016, 84, 1805-1812.	5.2	8
24	Simple nonlinear models suggest variable star universality. Physica D: Nonlinear Phenomena, 2016, 316, 16-22.	2.8	5
25	Nonlinear dynamics based digital logic and circuits. Frontiers in Computational Neuroscience, 2015, 9, 49.	2.1	19
26	Strange Nonchaotic Stars. Physical Review Letters, 2015, 114, 054101.	7.8	70
27	PULSATION PERIOD VARIATIONS IN THE RRc LYRAE STAR KIC 5520878. Astrophysical Journal, 2015, 798, 42.	4.5	9
28	Coupling Reduces Noise: Applying Dynamical Coupling to Reduce Local White Additive Noise. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2015, 25, 1550040.	1.7	7
29	Exploiting chaos for applications. Chaos, 2015, 25, 097615.	2.5	18
30	Watch Your Step: Integrating Nonlinear Dynamical Flows by Stepping Through Space and Time. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2014, 24, 1450145.	1.7	0
31	Noise tolerant spatiotemporal chaos computing. Chaos, 2014, 24, 043110.	2.5	17
32	Synthetic Computation: Chaos Computing, Logical Stochastic Resonance, and Adaptive Computing. Understanding Complex Systems, 2014, , 51-65.	0.6	4
33	Phase shift in the 24-hour rhythm of hippocampal EEG spiking activity in a rat model of temporal lobe epilepsy. Journal of Neurophysiology, 2013, 110, 1070-1086.	1.8	11
34	Reprogrammable biological logic gate that exploits noise. , 2011, , .		1
35	Chaos computing in terms of periodic orbits. Physical Review E, 2011, 84, 036207.	2.1	8
36	Noise Enhanced Logic Gates. AIP Conference Proceedings, 2011, , .	0.4	2

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37	Stochastic amplification of calcium-activated potassium currents in Ca2+ microdomains. Journal of Computational Neuroscience, 2011, 31, 647-666.	1.0	10
38	Phase shift in hippocampal circadian rhythm during the latent period of epileptic rats. BMC Neuroscience, 2011, 12, .	1.9	1
39	Logical stochastic resonance with correlated internal and external noises in a synthetic biological logic block. Chaos, 2011, 21, 047521.	2.5	45
40	Unstable periodic orbits and noise in chaos computing. Chaos, 2011, 21, 047520.	2.5	15
41	Noise-aided computation within a synthetic gene network through morphable and robust logic gates. Physical Review E, 2011, 83, 041909.	2.1	41
42	Creating morphable logic gates using logical stochastic resonance in an engineered gene network. Europhysics Letters, 2011, 93, 18001.	2.0	52
43	Chaos for Speech Coding and Production. Lecture Notes in Computer Science, 2011, , 270-278.	1.3	1
44	Logical stochastic resonance. Chemical Physics, 2010, 375, 424-434.	1.9	63
45	Effects of phase on homeostatic spike rates. Biological Cybernetics, 2010, 102, 427-440.	1.3	6
46	Synchrony with shunting inhibition in a feedforward inhibitory network. Journal of Computational Neuroscience, 2010, 28, 305-321.	1.0	10
47	Granger causality relationships between local field potentials in an animal model of temporal lobe epilepsy. Journal of Neuroscience Methods, 2010, 189, 121-129.	2.5	42
48	Chaogates: Morphing logic gates that exploit dynamical patterns. Chaos, 2010, 20, 037107.	2.5	45
49	Introduction to Focus Issue: Intrinsic and Designed Computation: Information Processing in Dynamical Systemsâ€"Beyond the Digital Hegemony. Chaos, 2010, 20, 037101.	2.5	69
50	A Noise-Assisted Reprogrammable Nanomechanical Logic Gate. Nano Letters, 2010, 10, 1168-1171.	9.1	160
51	Support vector machines for seizure detection in an animal model of chronic epilepsy. Journal of Neural Engineering, 2010, 7, 036001.	3.5	46
52	Predicting synchrony in heterogeneous pulse coupled oscillators. Physical Review E, 2009, 80, 021908.	2.1	13
53	Realization of reliable and flexible logic gates using noisy nonlinear circuits. Applied Physics Letters, 2009, 95, .	3.3	80
54	ANALYSIS OF HIGH-RESOLUTION MICROELECTRODE EEG RECORDINGS IN AN ANIMAL MODEL OF SPONTANEOUS LIMBIC SEIZURES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2009, 19, 605-617.	1.7	6

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55	Construction of a Chaotic Computer Chip. Understanding Complex Systems, 2009, , 3-13.	0.6	1
56	Temporal Lobe Epilepsy: Anatomical and Effective Connectivity. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2009, 17, 214-223.	4.9	24
57	Logic from nonlinear dynamical evolution. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 1346-1351.	2.1	28
58	Reconfigurable logic blocks based on a chaotic Chua circuit. Chaos, Solitons and Fractals, 2009, 41, 233-244.	5.1	15
59	A simple nonlinear dynamical computing device. Chaos, Solitons and Fractals, 2009, 42, 809-819.	5.1	11
60	Reliable Logic Circuit Elements that Exploit Nonlinearity in the Presence of a Noise Floor. Physical Review Letters, 2009, 102, 104101.	7.8	186
61	Circadian control of neural excitability in an animal model of temporal lobe epilepsy. Neuroscience Letters, 2009, 455, 145-149.	2.1	32
62	ROBUST CONTROL OF SPATIOTEMPORAL CHAOS IN COUPLED MAP LATTICES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2009, 19, 2031-2042.	1.7	3
63	Spike timing dependent plasticity promotes synchrony of inhibitory networks in the presence of heterogeneity. Journal of Computational Neuroscience, 2008, 25, 262-281.	1.0	29
64	Chaos computing: ideas and implementations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 653-664.	3.4	32
65	EXPLOITING NONLINEAR DYNAMICS TO STORE AND PROCESS INFORMATION. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2008, 18, 1551-1559.	1.7	10
66	Non-parametric early seizure detection in an animal model of temporal lobe epilepsy. Journal of Neural Engineering, 2008, 5, 85-98.	3.5	23
67	Temporal spike pattern learning. Physical Review E, 2008, 78, 031918.	2.1	4
68	FAULT TOLERANCE AND DETECTION IN CHAOTIC COMPUTERS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2007, 17, 1955-1968.	1.7	20
69	DYNAMIC TRANSMURALITY: CARDIAC OPTICAL MAPPING REVEALS WAVES TRAVEL ACROSS TRANSMURAL ABLATION LINES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2007, 17, 3229-3234.	1.7	2
70	Introduction: Cardiovascular physics. Chaos, 2007, 17, 015101.	2.5	26
71	Early seizure detection in an animal model of temporal lobe epilepsy. AIP Conference Proceedings, 2007, , .	0.4	0
72	Evolving into epilepsy: Multiscale electrophysiological analysis and imaging in an animal model. Experimental Neurology, 2006, 198, 31-47.	4.1	27

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73	Coherence Analysis Over the Latent Period of Epileptogenesis Reveal that High-Frequency Communication is Increased Across Hemispheres in an Animal Model of Limbic Epilepsy. , 2006, 2006, 1154-6.		4
74	Pre-Ictal Entropy Analysis of Microwire Data from an Animal Model of Limbic Epilepsy. , 2006, 2006, 1605-7.		3
75	Exploiting the controlled responses of chaotic elements to design configurable hardware. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 2483-2494.	3.4	8
76	Using Recurrence Quantification Analysis Determinism for Noise Removal in Cardiac Optical Mapping. IEEE Transactions on Biomedical Engineering, 2006, 53, 767-770.	4.2	7
77	Detection of High Frequency Oscillations with Teager Energy in an Animal Model of Limbic Epilepsy. , 2006, 2006, 2578-80.		18
78	Reconfigurable Logic Element using a Chaotic Circuit. , 2006, , .		0
79	Exploiting Chaos for Computation. , 2006, , .		0
80	Exploiting Nonlinear Dynamics to Search for the Existence of Matches in a Database. , 2006, , .		0
81	Pre-Ictal Entropy Analysis of Microwire Data from an Animal Model of Limbic Epilepsy. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
82	Construction of a reconfigurable dynamic logic cell. Pramana - Journal of Physics, 2005, 64, 433-441.	1.8	14
83	Nonlinear analysis of cardiac optical mapping data reveals ordered period in defibrillation failure. , 2005, , .		0
84	Realization of the fundamental NOR gate using a chaotic circuit. Physical Review E, 2003, 68, 016205.	2.1	33
85	Implementation of NOR Gate by a Chaotic Chua's Circuit. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2003, 13, 2669-2672.	1.7	68
86	Nonlinear Synchronization Analysis of Spatiotemporal Heart Data. AIP Conference Proceedings, 2003, , .	0.4	0
87	Investigation and Remediation of Karst Features at Foundry Landfill Site. , 2003, , 349.		0
88	Flexible parallel implementation of logic gates using chaotic elements. Physical Review E, 2002, 65, 036216.	2.1	44
89	Reply to â€œComment on â€˜Monostable array-enhanced stochastic resonanceâ€™ â€. Physical Review E, 2002, 66, .	2.1	3
90	Chaos computing: implementation of fundamental logical gates by chaotic elements. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2002, 49, 1629-1633.	0.1	81

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91	Nonlinear antenna technology. Proceedings of the IEEE, 2002, 90, 882-897.	21.3	49
92	Parallel computing with extended dynamical systems. Physical Review E, 2002, 65, 036214.	2.1	35
93	Monostable array-enhanced stochastic resonance. Physical Review E, 2001, 63, 051107.	2.1	35
94	Controlling neuronal spikes. Physical Review E, 2001, 63, 056209.	2.1	20
95	Noninvasive control of stochastic resonance. Physical Review E, 2001, 63, 041107.	2.1	47
96	Electromagnetic fields and biological tissues: from nonlinear response to chaos control. , 2000, , 341-373.		0
97	Pulse-enhanced stochastic resonance. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 277, 13-17.	2.1	17
98	Theory of controlling stochastic resonance. Physical Review E, 2000, 62, 317-327.	2.1	48
99	Chaos at 35,000 feet. IEEE Instrumentation and Measurement Magazine, 2000, 3, 18-21.	1.6	0
100	Controlling Stochastic Resonance. Physical Review Letters, 1999, 82, 4574-4577.	7.8	111
101	Computing with distributed chaos. Physical Review E, 1999, 60, 363-377.	2.1	86
102	Spatiotemporal evolution of ventricular fibrillation. Nature, 1998, 392, 78-82.	27.8	476
103	Can Neurons Distinguish Chaos from Noise?. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1998, 08, 767-781.	1.7	9
104	Dynamics Based Computation. Physical Review Letters, 1998, 81, 2156-2159.	7.8	178
105	Noise Enhanced Propagation. Physical Review Letters, 1998, 81, 5048-5051.	7.8	120
106	A method for visualization of ventricular fibrillation: Design of a cooled fiberoptically coupled image intensified CCD data acquisition system incorporating wavelet shrinkage based adaptive filtering. Chaos, 1998, 8, 94-102.	2.5	22
107	Real-time experimental control of a system in its chaotic and nonchaotic regimes. Physical Review E, 1997, 56, R3749-R3752.	2.1	26
108	Tracking unstable periodic orbits in nonstationary high-dimensional chaotic systems:Method and experiment. Physical Review E, 1997, 55, 4935-4942.	2.1	16

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109	Maintenance of chaos in a computational model of a thermal pulse combustor. Chaos, 1997, 7, 605-613.	2.5	42
110	Introduction: Control and synchronization of chaos. Chaos, 1997, 7, 509-511.	2.5	46
111	Control and synchronization of chaos in high dimensional systems: Review of some recent results. Chaos, 1997, 7, 644-652.	2.5	41
112	Stochastic Resonance in a Neuronal Network from Mammalian Brain. Physical Review Letters, 1996, 77, 4098-4101.	7.8	316
113	Exploring the nonlinear dynamics of a physiologically viable model neuron. AIP Conference Proceedings, 1996, , .	0.4	1
114	Array enhanced stochastic resonance: Implications for signal processing. AIP Conference Proceedings, 1996, , .	0.4	3
115	Applications of chaos in biology and medicine. AIP Conference Proceedings, 1996, , .	0.4	16
116	Electric field suppression of epileptiform activity in hippocampal slices. Journal of Neurophysiology, 1996, 76, 4202-4205.	1.8	193
117	Maintaining Chaos. Materials Research Society Symposia Proceedings, 1996, 459, 545.	0.1	0
118	Scaling laws for spatiotemporal synchronization and array enhanced stochastic resonance. Physical Review E, 1996, 53, 2081-2086.	2.1	129
119	Controlling chaos in high dimensions: Theory and experiment. Physical Review E, 1996, 53, 4334-4344.	2.1	67
120	Taming spatiotemporal chaos with disorder. Nature, 1995, 378, 465-467.	27.8	215
121	Techniques for the control of chaos. Physica D: Nonlinear Phenomena, 1995, 86, 198-211.	2.8	84
122	Disorder-enhanced synchronization. Physics Letters, Section A: General, Atomic and Solid State Physics, 1995, 206, 54-60.	2.1	77
123	Chaos control of cardiac arrhythmias. Trends in Cardiovascular Medicine, 1995, 5, 76-80.	4.9	23
124	Evidence for Determinism in Ventricular Fibrillation. Physical Review Letters, 1995, 75, 1230-1233.	7.8	72
125	Experimental Maintenance of Chaos. Physical Review Letters, 1995, 74, 4420-4423.	7.8	68
126	Array Enhanced Stochastic Resonance and Spatiotemporal Synchronization. Physical Review Letters, 1995, 75, 3-6.	7.8	421

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127	Adaptive control and tracking of chaos in a magnetoelastic ribbon. Physical Review E, 1995, 51, R2689-R2692.	2.1	20
128	Removal, Suppression, and Control of Chaos by Nonlinear Design. Applied Mechanics Reviews, 1995, 48, 795-808.	10.1	46
129	Principles and applications of chaotic systems. Communications of the ACM, 1995, 38, 96-102.	4.5	190
130	The fundamentals of controlling chaos. Integrative Psychological and Behavioral Science, 1994, 29, 235-245.	0.3	1
131	Controlling chaos in the brain. Nature, 1994, 370, 615-620.	27.8	898
132	Chaotic resonance: A simulation. Journal of Statistical Physics, 1993, 70, 437-450.	1.2	42
133	Mastering Chaos. Scientific American, 1993, 269, 78-84.	1.0	89
134	<title>Experimental techniques for exploiting chaos</title>. , 1993, , .		0
135	Controlling cardiac chaos. Science, 1992, 257, 1230-1235.	12.6	828
136	Experimental observation of stochastic resonance in a magnetoelastic ribbon. Physical Review A, 1992, 46, 5253-5256.	2.5	51
137	Using the sensitive dependence of chaos (the â€˜â€˜butterfly effectâ€™â€™) to direct trajectories in an experimental chaotic system. Physical Review Letters, 1992, 68, 2863-2866.	7.8	136
138	Experimental confirmation of the theory for critical exponents of crisis. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 153, 105-109.	2.1	37
139	Dynamics of a two-frequency parametrically driven duffing oscillator. Journal of Nonlinear Science, 1991, 1, 423-455.	2.1	74
140	Experimental confirmation of the scaling theory for noise-induced crises. Physical Review Letters, 1991, 66, 1947-1950.	7.8	60
141	Exact solutions of nonlinear differential equations using continued fractions. Societa Italiana Di Fisica Nuovo Cimento B-General Physics, Relativity Astronomy and Mathematical Physics and Methods, 1990, 105, 429-435.	0.2	3
142	Experimental Observation of a Stranger Nonchaotic Attractor. Physical Review Letters, 1990, 65, 1172-1172.	7.8	0
143	Crisisâ€induced intermittency in a parametrically driven, gravitationally buckled, magnetoelastic amorphous ribbon experiment (invited). Journal of Applied Physics, 1990, 67, 5619-5623.	2.5	19
144	Experimental observation of a strange nonchaotic attractor. Physical Review Letters, 1990, 65, 533-536.	7.8	183

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145	Experimental control of chaos. Physical Review Letters, 1990, 65, 3211-3214.	7.8	660
146	Experimental observation of crisis-induced intermittency and its critical exponent. Physical Review Letters, 1989, 63, 923-926.	7.8	110
147	Nonperturbative solutions of nonlinear differential equations using continued fractions. Journal of Mathematical Physics, 1988, 29, 1761-1770.	1.1	5
148	Effective and Anatomical Connectivity in a Rat Model of Spontaneous Limbic Seizure. , 0, , 45-59.		0