Marco Storace

List of Publications by Citations

126 papers	1,253 citations	17 h-index	28 g-index
150 ext. papers	1,478 ext. citations	2.9 avg, IF	4.69 L-index

#	Paper	IF	Citations
126	The Hindmarsh-Rose neuron model: bifurcation analysis and piecewise-linear approximations. *Chaos*, **2008**, 18, 033128	3.3	154
125	Ultra-Fast Stabilizing Model Predictive Control via Canonical Piecewise Affine Approximations. *IEEE Transactions on Automatic Control*, **2011**, 56, 2883-2897	5.9	63
124	Accurate and fast simulation of channel noise in conductance-based model neurons by diffusion approximation. *PLoS Computational Biology*, **2011**, 7, e1001102	5	61
123	Piecewise-linear approximation of nonlinear dynamical systems. *IEEE Transactions on Circuits and Systems Part 1: Regular Papers*, **2004**, 51, 830-842		60
122	Codimension-Two Homoclinic Bifurcations Underlying Spike Adding in the Hindmarsh--Rose Burster. *SIAM Journal on Applied Dynamical Systems*, **2012**, 11, 939-962	2.8	40
121	A modular supervised algorithm for vessel segmentation in red-free retinal images. *Computers in Biology and Medicine*, **2008**, 38, 913-22	7	37
120	Digital architectures realizing piecewise-linear multivariate functions: Two FPGA implementations. *International Journal of Circuit Theory and Applications*, **2011**, 39, 1-15	2	30
119	A method for the approximate synthesis of cellular non-linear networksPart 1: Circuit definition. *International Journal of Circuit Theory and Applications*, **2003**, 31, 277-297	2	27
118	Synthesis of nonlinear multiport resistors: a PWL approach. *IEEE Transactions on Circuits and Systems Part 1: Regular Papers*, **2002**, 49, 1138-1149		27
117	Synthesis of multiport resistors with piecewise-linear characteristics: a mixed-signal architecture. *International Journal of Circuit Theory and Applications*, **2005**, 33, 307-319	2	26
116	A PWL ladder circuit which exhibits hysteresis. *International Journal of Circuit Theory and Applications*, **1994**, 22, 513-526	2	25
115	Model-Based Compensation of Rate-Dependent Hysteresis in a Piezoresistive Strain Sensor. *IEEE Transactions on Industrial Electronics*, **2019**, 66, 8205-8213	8.9	23
114	A Power-Loss-Dependent Inductance Model for Ferrite-Core Power Inductors in Switch-Mode Power Supplies. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2019**, 66, 2394-2402	3.9	21
113	Digital Circuit Realization of Piecewise-Affine Functions With Nonuniform Resolution: Theory and FPGA Implementation. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2010**, 57, 131-135	3.5	20
112	Towards analog implementations of PWL two-dimensional non-linear functions. *International Journal of Circuit Theory and Applications*, **2005**, 33, 147-160	2	19
111	Circuit implementation of piecewise-affine functions based on a binary search tree **2009**,		18
110	Experimental bifurcation diagram of a circuit-implemented neuron model. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2010**, 374, 4589-4593	2.3	18

109	FPGA Implementations of Piecewise Affine Functions Based on Multi-Resolution Hyperrectangular Partitions. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2012**, 59, 2920-2933	3.9	16
108	A method for the approximate synthesis of cellular non-linear networks Part 2: Circuit reduction. *International Journal of Circuit Theory and Applications*, **2003**, 31, 299-313	2	16
107	. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2016**, 63, 413-422	3.9	16
106	A Switched Predictive Controller for an Electrical Powertrain System With Backlash. *IEEE Transactions on Power Electronics*, **2017**, 32, 4036-4047	7.2	15
105	Two FPGA-Oriented High-Speed Irradiance Virtual Sensors for Photovoltaic Plants. *IEEE Transactions on Industrial Informatics*, **2017**, 13, 157-165	11.9	14
104	Nonlinear behavioural model of charge pump PLLs. *International Journal of Circuit Theory and Applications*, **2013**, 41, 1027-1046	2	14
103	Piecewise linear implementation of nonlinear dynamical systems: from theory to practice. *Electronics Letters*, **2009**, 45, 966	1.1	14
102	A hysteresis-based chaotic circuit: dynamics and applications. *International Journal of Circuit Theory and Applications*, **1999**, 27, 527-542	2	14
101	An MPC-Based Approach for Emergency Control Ensuring Transient Stability in Power Grids With Steam Plants. *IEEE Transactions on Industrial Electronics*, **2019**, 66, 5412-5422	8.9	14
100	High-Speed Piecewise Affine Virtual Sensors. *IEEE Transactions on Industrial Electronics*, **2012**, 59, 1228-1237	8.7	12
99	Integrated circuit implementation of multi-dimensional piecewise-linear functions **2010**, 20, 1723-1732		12
98	Design Principles for Central Pattern Generators With Preset Rhythms. *IEEE Transactions on Neural Networks and Learning Systems*, **2020**, 31, 3658-3669	10.3	12
97	Memory characteristics of hysteresis and creep in multi-layer piezoelectric actuators: An experimental analysis. *Physica B: Condensed Matter*, **2014**, 435, 40-43	2.8	11
96	FPGA implementation of optimal and approximate model predictive control for a buck-boost DC-DC converter **2012**,		11
95	Simple realisation of hysteresis chaos generator. *Electronics Letters*, **1998**, 34, 10	1.1	11
94	Accurate Modeling of Inductors Working in Nonlinear Region in Switch-Mode Power Supplies with Different Load Currents **2018**,		11
93	A Circuit Model of Hysteresis and Creep. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2015**, 62, 501-505	3.5	10
92	**2014**,		10

91	Hardware-in-the-loop simulations of circuit architectures for the computation of exact and approximate explicit MPC control functions **2012**,		10
90	Inferring network dynamics and neuron properties from population recordings. *Frontiers in Computational Neuroscience*, **2011**, 5, 43	3.5	10
89	Static and dynamic hysteretic features in a PWL circuit. *International Journal of Circuit Theory and Applications*, **1996**, 24, 183-199	2	10
88	Simulations of the behavior of synaptically driven neurons via time-invariant circuit models. *IEEE Transactions on Biomedical Engineering*, **1997**, 44, 1282-7	5	9
87	Towards Accurate PWL Approximations of Parameter-Dependent Nonlinear Dynamical Systems With Equilibria and Limit Cycles. *IEEE Transactions on Circuits and Systems Part 1: Regular Papers*, **2007**, 54, 620-631		9
86	A Nonlinear Inductance Model Able to Reproduce Thermal Transient in SMPS Simulations **2019**,		8
85	Design of Synthetic Central Pattern Generators Producing Desired Quadruped Gaits. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2018**, 65, 1028-1039	3.9	8
84	Ferrite inductor models for switch-mode power supplies analysis and design **2017**,		8
83	Accurate and Efficient PSD Computation in Mixed-Signal Circuits: A Time-Domain Approach. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2014**, 61, 905-909	3.5	8
82	. *IEEE Transactions on Circuits and Systems Part 1: Regular Papers*, **2007**, 54, 1542-1554		8
81	Discontinuities in a one-dimensional map describing a hysteretic chaotic circuit. *Nonlinear Analysis: Theory, Methods & Applications*, **2001**, 47, 5253-5264	1.3	8
80	Basic bifurcation analysis of a hysteresis oscillator. *International Journal of Circuit Theory and Applications*, **2001**, 29, 343-366	2	8
79	Behavioral Models for Ferrite-Core Inductors in Switch-Mode DC-DC Power Supplies: A Survey **2019** ,		8
78	Automatic Domain Partitioning of Piecewise-Affine Simplicial Functions Implementing Model Predictive Controllers. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2015**, 62, 886-890	3.5	7
77	TWO-DIMENSIONAL BIFURCATION DIAGRAMS OF A CHAOTIC CIRCUIT BASED ON HYSTERESIS. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2002**, 12, 43-69	2	7
76	A Piecewise-Affine Inductance Model for Inductors Working in Nonlinear Region **2019**,		6
75	CEPAGE: A toolbox for Central Pattern Generator analysis **2017**,		6
74	Synthesis of stabilizing model predictive controllers via canonical piecewise affine approximations **2010**,		6

73	On a circuit representation of the Hodgkin and Huxley nerve axon membrane equations. *International Journal of Circuit Theory and Applications*, **1997**, 25, 115-124	2	6
72	FPGA implementation of a new scheme for the circuit realization of PWL functions **2007**,		6
71	PWL approximation of nonlinear dynamical systems, part I: structural stability. *Journal of Physics: Conference Series*, **2005**, 22, 208-221	0.3	6
70	Cellular non-linear networks for minimization of functionals. Part 1: Theoretical aspects. *International Journal of Circuit Theory and Applications*, **2001**, 29, 151-167	2	6
69	RC op-amp implementation of hysteresis chaotic oscillator. *Electronics Letters*, **2001**, 37, 209	1.1	6
68	Secure communication by hysteresis-based chaotic circuit. *Electronics Letters*, **1998**, 34, 1077	1.1	6
67	Low-complexity digital architecture for solving the point location problem in explicit Model Predictive Control. *Journal of the Franklin Institute*, **2015**, 352, 2249-2258	4	5
66	Model Reduction for Optimized Online Compensation of Hysteresis and Creep in Piezoelectric Actuators. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2018**, 65, 1748-1752	3.5	5
65	Dimensional reduction in networks of non-Markovian spiking neurons: Equivalence of synaptic filtering and heterogeneous propagation delays. *PLoS Computational Biology*, **2019**, 15, e1007404	5	5
64	Transient dynamics of an adiabatic NEMS. *Annalen Der Physik*, **2014**, 526, 541-554	2.6	5
63	Reliable and efficient phase noise simulation of mixed-mode integer-N Phase-Locked Loops **2013**,		5
62	**2011**,		5
61	MOBY-DIC: A MATLAB Toolbox for Circuit-Oriented Design of Explicit MPC. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2012**, 45, 218-225		5
60	On the representation of static hysteresis curves by a PWL ladder circuit. *International Journal of Circuit Theory and Applications*, **1998**, 26, 167-177	2	5
59	BIFURCATION ANALYSIS OF AN IMPACT MODEL FOR FOREST FIRE PREDICTION. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2008**, 18, 2275-2288	2	5
58	Bifurcation analysis and its experimental validation for a hysteresis circuit oscillator. *IEEE Transactions on Circuits and Systems Part 2: Express Briefs*, **2006**, 53, 517-521		5
57	Cellular non-linear networks for minimization of functionals. Part 2: Examples. *International Journal of Circuit Theory and Applications*, **2001**, 29, 169-184	2	5
56	Analyzing synchronized clusters in neuron networks. *Scientific Reports*, **2020**, 10, 16336	4.9	5

55	Hysteresis and creep: Comparison between a power-law model and Kuhnen's model. *Physica B: Condensed Matter*, **2016**, 486, 2-6	2.8	5
54	Efficient transient noise analysis of non-periodic mixed analogue/digital circuits. *IET Circuits, Devices and Systems*, **2015**, 9, 73-80	1.1	4
53	A Nonlinear Behavioral Ferrite-Core Inductance Model Able to Reproduce Thermal Transients in Switch-Mode Power Supplies. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2020**, 67, 1255-1263	3.9	4
52	Piecewise linear approximations of multivariate functions: A multiresolution-based compression algorithm suitable for circuit implementation. *Applied Numerical Mathematics*, **2010**, 60, 924-933	2.5	4
51	Circuit realization of Markov random fields for analog image processing. *International Journal of Circuit Theory and Applications*, **1998**, 26, 477-498	2	4
50	A procedure for the computation of accurate PWL approximations of non-linear dynamical systems. *International Journal of Circuit Theory and Applications*, **2006**, 34, 237-248	2	4
49	BIFURCATION ANALYSIS OF A PWL CHAOTIC CIRCUIT BASED ON HYSTERESIS THROUGH A ONE-DIMENSIONAL MAP. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2001**, 11, 1911-1927	2	4
48	Low-complexity piecewise-affine virtual sensors: theory and design. *International Journal of Control* , **2014**, 87, 622-632	1.5	3
47	Effects of numerical noise floor on the accuracy of time domain noise analysis in circuit simulators **2013**,		3
46	HARMONIC ANALYSIS OF OSCILLATORS THROUGH STANDARD NUMERICAL CONTINUATION TOOLS. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2010**, 20, 4029-4037	2	3
45	Barriers to transport induced by periodic oscillations in a physical model of the human vitreous chamber. *Physical Review E*, **2011**, 83, 036311	2.4	3
44	A cellular non-linear network for image fusion based on data regularization. *International Journal of Circuit Theory and Applications*, **2006**, 34, 533-546	2	3
43	PWL approximation of the Hindmarsh-Rose neuron model in view of its circuit implementation **2007**,		3
42	On the complexity of periodic and nonperiodic behaviors of a hysteresis-based electronic oscillator. *Chaos*, **2007**, 17, 043108	3.3	3
41	A Simplicial PWL Integrated Circuit Realization **2007**,		3
40	Multiresolution PWL approximations		3
39	Dynamic behaviour of hysteresis chaotic circuit. *Electronics Letters*, **1999**, 35, 1896	1.1	3
38	One-way dependent clusters and stability of cluster synchronization in directed networks. *Nature Communications*, **2021**, 12, 4073	17.4	3

37	A low-cost online estimator for switch-mode power supplies with saturating ferrite-core inductors **2019**,		3
36	Application of a low-cost piezoelectric displacement estimation technique based on laser interferometry for hysteresis open-loop compensation in an AFM scanner. *Physica B: Condensed Matter*, **2018**, 549, 43-46	2.8	2
35	bal: A library for the brute-force analysis of dynamical systems. *Computer Physics Communications*, **2016**, 201, 126-134	4.2	2
34	CONTINUATION ANALYSIS OF A PHASE/QUADRATURE ELECTRONIC OSCILLATOR. *Journal of Circuits, Systems and Computers*, **2010**, 19, 773-785	0.9	2
33	A method based on a genetic algorithm to find PWL approximations of multivariate nonlinear functions **2008**,		2
32	Piecewise-linear approximation of the Hindmarsh-Rose neuron model. *Journal of Physics: Conference Series*, **2008**, 138, 012011	0.3	2
31	A CNN for biomedical image processing		2
30	PWL approximation of nonlinear dynamical systems, part II: identification issues. *Journal of Physics: Conference Series*, **2005**, 22, 30-42	0.3	2
29	Coexistence of attractors in an oscillator based on hysteresis		2
28	A method for defining analog circuits for the minimization of discrete functionals: An image processing application. *Circuits, Systems, and Signal Processing*, **1999**, 18, 457-477	2.2	2
27	Structurally Stable PWL Approximation of Nonlinear Dynamical Systems Admitting Limit Cycles: An Example. *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, **2006**, E89-A, 2759-2766	0.4	2
26	An Algorithm for Finding Equitable Clusters in Multi-Layer Networks **2020**,		2
25	Generalized half-center oscillators with short-term synaptic plasticity. *Physical Review E*, **2020**, 102, 032406	2.4	2
24	Modeling and compensation of hysteresis and creep: The HysTool toolbox **2018**,		2
23	Effects of Parameter Variation on the Accuracy of a Nonlinear Inductor Model for Switch-Mode Power Supplies Applications **2020**,		1
22	A mathematical model for the vessel recruitment in coronary microcirculation in the absence of active autoregulation. *Microvascular Research*, **2016**, 104, 38-45	3.7	1
21	Design of Minimal Synthetic Circuits with Sensory Feedback for Quadruped Locomotion **2018**,		1
20	An algorithm for automatic domain partitioning of piecewise-affine model predictive control laws **2013**,		1

19	High-speed explicit nonlinear model predictive control **2017**,		1
18	**2015**,		1
17	Synchronization: a tool for validating a PWL circuit that approximates the Hindmarsh-Rose neuron model. *Nonlinear Theory and Its Applications IEICE*, **2012**, 3, 165-179	0.6	1
16	Design and circuit implementation of approximate switched MPC **2013**,		1
15	Synchronization properties in networks of Hindmarsh-Rose neurons and their PWL approximations with linear symmetric coupling **2009**,		1
14	BIFURCATION ANALYSIS OF A CIRCUIT-RELATED GENERALIZATION OF THE SHIPMAP. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2006**, 16, 2435-2452	2	1
13	PWL identification of dynamical systems: some examples		1
12	Two-port ideal power transferitors: a unified introduction to ideal transformer and gyrator. *IEEE Transactions on Circuits and Systems Part 2: Express Briefs*, **2004**, 51, 426-429		1
11	Nonlinear models of power inductors: A survey. *International Journal of Circuit Theory and Applications*, **2022**, 50, 2	2	1
10	Pareto-optimal selection of saturating inductors in the design of Switch-Mode Power Supplies **2019** ,		1
9	Dipole monolayer behaviour in the presence of electrodes. *Journal of Electrostatics*, **1996**, 37, 95-120	1.7	0
8	Towards more biologically plausible central-pattern-generator models.. *Physical Review E*, **2021**, 104, 064405	2.4	0
7	Phase analysis method for burst onset prediction. *Physical Review E*, **2017**, 95, 022412	2.4	
6	Explicit hybrid model predictive control: discontinuous piecewise-affine approximation and FPGA implementation. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2011**, 44, 1350-1355		
5	Complex links between codimension-2 bifurcations in an electronic oscillator based on hysteresis. *Journal of Physics: Conference Series*, **2006**, 55, 12-27	0.3	
4	CLASSIFICATION OF CHAOTIC SEQUENCES WITH OPEN-LOOP ESTIMATOR □OPTIMAL DESIGN FOR NOISY ENVIRONMENTS. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2004**, 14, 3023-3043	2	
3	Advanced Concepts: Analysis of Nonlinear Oscillators. *Lecture Notes in Electrical Engineering*, **2020**, 401-473	0.3	
2	Delays induced cluster synchronization in chaotic networks. *Chaos*, **2020**, 30, 121105	3.3	

List of Publications

1 Electric Control of Molecular Dipoles: A Paradigm for Information Processing **1999**, 93-96