Wolfgang Mathis

List of Publications by Year
in descending order

106 papers	473 citations	1306789 7 h-index	940134 16 g-index
110 all docs	110 docs citations	110 times ranked	218 citing authors

#	Article	IF	Citations
1	A GPU-Accelerated Web-Based Synthesis Tool for CT Sigma-Delta Modulators. IEEE Transactions on Circuits and Systems I: Regular Papers, 2014, 61, 1429-1441.	3.5	44
2	Theorie nichtlinearer Netzwerke. , 1987, , .		41
3	Quantum information processing and entanglement with Josephson charge qubits coupled through nanomechanical resonator. Physics Letters, Section A: General, Atomic and Solid State Physics, 2004, 324, 484-488.	0.9	36
4	Theoretische Elektrotechnik. Springer-Lehrbuch, 2013, , .	0.1	31
5	A thermodynamical approach to noise in non-linear networks. International Journal of Circuit Theory and Applications, 1998, 26, 147-165.	1.3	28
6	Closed-form network representations of frequency-dependentRLGC parameters. International Journal of Circuit Theory and Applications, 2005, 33, 463-485.	1.3	25
7	Phase measurement and generation of arbitrary superposition of Fock states. Physics Letters, Section A: General, Atomic and Solid State Physics, 2004, 323, 329-338.	0.9	11
8	Generation of an entangled coherent state and reconstruction of a two-mode entangled state via resonant interaction. Physics Letters, Section A: General, Atomic and Solid State Physics, 2005, 337, 305-312.	0.9	10
9	Calculating transfer functions of CT sigma-delta modulators with arbitrary DAC waveforms. , 2013, , .		9
10	On Noise Analysis of Oscillators Based on Statistical Mechanics. International Journal of Electronics and Telecommunications, 2010, 56, 357-366.	0.5	8
11	Quantum transport, quantum effects and circuit functionality of nanostructured electronic circuits. International Journal of Circuit Theory and Applications, 2004, 32, 407-424.	1.3	7
12	Efficient model reduction of passive electrical networks with a large number of independent sources. , 2008, , .		7
13	Geometric dynamics of nonlinear circuits and jump effects. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2011, 30, 1307-1318.	0.5	7
14	Hardware-Accelerated Simulation Environment for CT Sigma–Delta Modulators Using an FPGA. IEEE Transactions on Circuits and Systems II: Express Briefs, 2012, 59, 471-475.	2.2	7
15	Modelling and Design Concepts for Electronic Oscillators and its Synchronization. Open Cybernetics and Systemics Journal, 2009, 3, 47-60.	0.3	7
16	A nonlinear systematic design flow for LC tank VCOs based on large signal capacitance modeling. , 2009, , .		6
17	A single DAC CT sigma-delta modulator with Butterworth STF characteristic. , 2011, , .		6
18	A numerical approach for nonlinear dynamical circuits with jumps. , 2011, , .		6

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19	Dissipative Nambu systems and oscillator circuit design. Nonlinear Theory and Its Applications IEICE, 2014, 5, 259-271.	0.4	6
20	A self-consistent Carleman linearization technique for the large signal analysis of nonlinear circuits. , 2016, , .		6
21	Modeling and simulation of electrical machines within a CCM framework. , 2017, , .		6
22	Analysis and Design of Nonlinear Circuits With a Self-Consistent Carleman Linearization. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 4272-4284.	3.5	6
23	Hybrid Numerical Simulation of Micro Electro Mechanical Systems. Progress in Electromagnetics Research Symposium: [proceedings] Progress in Electromagnetics Research Symposium, 2006, 2, 270-274.	0.4	6
24	Geometric theory of nonlinear dynamical networks. , 1991, , 52-65.		5
25	Recent developments in numerical integration of differential equations. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 1994, 7, 99-125.	1.2	5
26	Creating quantum entanglement between multi-atom Dicke states and two cavity modes. Journal of Modern Optics, 2005, 52, 2001-2011.	0.6	5
27	STF optimization of 1-bit CT ΣΔ modulators based on scaled loop filter coefficients. , 2011, , .		5
28	A novel optimization method for CT sigma-delta-modulators using a switched system model. , 2011, , .		5
29	Modeling and simulation aspects of AC machines. Archives of Electrical Engineering, 2016, 65, 315-326.	1.0	5
30	Modelling and Design Concepts for Electronic Oscillators and its Synchronization. Open Cybernetics and Systemics Journal, 2009, 3, 47-60.	0.3	5
31	A Three Dimensional FEM-BEM Approach for the Simulation of Magnetic Force Microscopes. Progress in Electromagnetics Research Symposium: [proceedings] Progress in Electromagnetics Research Symposium, 2009, 5, 281-286.	0.4	5
32	Irreversible thermodynamics and thermal noise of nonâ€linear networks. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 1998, 17, 635-648.	0.5	4
33	Generation of a multi-photon Greenbergerâ€"Horneâ€"Zeilinger state with linear optical elements and photon detectors. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, 119-121.	1.4	4
34	Analysis of emitter-coupled multivibrators by singularly perturbed systems. Mathematical and Computer Modelling of Dynamical Systems, 2007, 13, 531-543.	1.4	4
35	Analysis of jump behavior in nonlinear electronic circuits using computational geometric methods. , 2009, , .		4
36	Discrete-time simulation of arbitrary digital/analog converter waveforms in continuous-time sigma-delta modulators. , 2012, , .		4

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37	Oscillator synthesis based on Nambu mechanics with canonical dissipative damping. , 2013, , .		4
38	A Low-Power, Low-Noise 37-MHz Photoreceiver for Intersatellite Laser Interferometers Using Discrete Heterojunction Bipolar Transistors. IEEE Sensors Journal, 2018, 18, 7414-7420.	2.4	4
39	Noise Analysis of Nonlinear Electrical Circuits and Devices. , 2003, , 269-282.		4
40	Fast Switching Behavior in Nonlinear Electronic Circuits: A Geometric Approach. Studies in Computational Intelligence, 2013, , 99-116.	0.7	4
41	Generalized Telegraphist's Equations for Deformed Waveguides. Electromagnetics, 1998, 18, 353-365.	0.3	3
42	The generation of the Greenberger–Horne–Zeilinger state of four distant atoms conditioned on cavity decay. Journal of Optics B: Quantum and Semiclassical Optics, 2004, 6, S142-S146.	1.4	3
43	On the Start-Up Behavior and Steady-State Oscillation of Singularly Perturbed Harmonic Oscillators. Nonlinear Dynamics, 2006, 44, 277-283.	2.7	3
44	Design of nonlinear CMOS circuits in the Nano-GHz Era and its mathematical challenges. Mathematics and Computers in Simulation, 2011, 82, 381-391.	2.4	3
45	Numerical modeling of a MEMS actuator considering several magnetic force calculation methods. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2011, 30, 1176-1188.	0.5	3
46	A block-oriented approach to EMI-induced distortion analysis for nonlinear analog circuits. , 2012, , .		3
47	On the derivation of generalized transmission line equations of cylindrical waveguides with irregular deformed surfaces. , 2015, , .		3
48	Scheme for generating maximally entangled atomic states in a spinor Bose–Einstein condensate. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 354, 151-155.	0.9	2
49	New modulation strategy for controlled power electronic applications with low switching frequencies. , 2008, , .		2
50	Numerical computation of magnetic fields applied to magnetic force microscopy. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2009, 28, 120-129.	0.5	2
51	A comparison of different magnetic force distributions with respect to mechanical deformations using a hybrid calculation method. , 2010, , .		2
52	Geometrical interpretation of jump phenomena in nonlinear dynamical circuits. , 2011, , .		2
53	Analysis of the "Sonar Hopf" Cochlea. Sensors, 2011, 11, 5808-5818.	2.1	2
54	Peaking reduced STF design for CT $\Sigma\Delta$ modulators with selective pole compensation. , 2012, , .		2

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55	Transient solution of fast switching systems without regularization. , 2012, , .		2
56	On the functionality of RTD MOBILE circuits - A geometric approach. , 2014, , .		2
57	Oscillator design concept using a self-consistent Carleman linearization. , 2017, , .		2
58	Performance of Runge-Kutta family numerical solvers for calculation of transient processes in AC machines. , 2017, , .		2
59	Finding DC Operating Points of Nonlinear Circuits Using Carleman Linearization. , 2021, , .		2
60	Fast Switching Behavior in Nonlinear Electronic Circuits: A Geometric Approach. Studies in Computational Intelligence, 2013, , 119-136.	0.7	2
61	Modeling and Simulation of stochastically deformed Waveguides using Schelkunoff's Method. Advances in Radio Science, 0, 16, 35-41.	0.7	2
62	On the modeling and the stability of continuous-time $\Sigma\Delta$-Modulators. , 2007, , .		1
63	Passive and reciprocal network description of independent sources for efficient model reduction. , 2008, , .		1
64	Mixed-logic dynamical system modeling of ΣΔ-modulators and its application to stability analysis. , 2009, , .		1
65	Numerical modelling of electrostatic force microscopes considering charge and dielectric constant. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2009, 28, 109-119.	0.5	1
66	Nonlinearity and dynamics in RF Oscillators: Analysis and design implications. , 2010, , .		1
67	Modellierungskonzept für MOS Varaktoren zur Minimierung der AM-FM Konversion in VCOs. Advances in Radio Science, 2010, 8, 143-149.	0.7	1
68	Stochastic Behavior of Dissipative Hamiltonian Systems with Limit Cycles. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 457-462.	0.4	1
69	The influence of Büttiker probe scattering to the port behavior of nanoscale metal–oxide–semiconductor devices. International Journal of Circuit Theory and Applications, 2013, 41, 573-582.	1.3	1
70	Modeling the static and dynamic behavior of multi-layer varistors in the threshold voltage region depending on the DC operating point. , 2014, , .		1
71	Optimized designing of a patch phased array with a MoM-solver. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2014, 33, 1847-1862.	0.5	1
72	A self-consistent Carleman linearization approach for the design of RF mixer circuits. , 2017, , .		1

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73	A modified CCM approach for simulating hierarchical interconnected dynamical systems. , 2017, , .		1
74	Embedded order reduction of hierarchical systems within an mCCM framework. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2018, 37, 1535-1544.	0.5	1
75	Analysis of Dissipative Nambu Systems with Limit Cycles Using a Self-consistent Carleman Linearization. IFAC-PapersOnLine, 2018, 51, 457-462.	0.5	1
76	100 years multivibrator-history, circuits and mathematical analysis. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2020, 39, 725-737.	0.5	1
77	On incorporating parasitic quantum effects in classical circuit simulations. , 2006, , 209-241.		1
78	Behavioral modeling of nonlinear transfer systems with load-dependent &lt;i&gt;X&lt;/i&gt;-parameters. Advances in Radio Science, 0, 15, 37-41.	0.7	1
79	Magnetic Force Calculations Applied to Magnetic Force Microscopy. Mathematics in Industry, 2010, , 101-108.	0.1	1
80	Historical Remarks on Andronov-Witt's Jump Postulate and its Generalization to Nonlinear Reciprocal Circuits. Communications in Computer and Information Science, 2014, , 76-83.	0.4	1
81	Ambiguities in input-output behavior of driven nonlinear systems close to bifurcation. Archives of Electrical Engineering, 2016, 65, 337-347.	1.0	1
82	Adapting the range of validity for the Carleman linearization. Advances in Radio Science, 0, 14, 51-54.	0.7	1
83	Implementation of a digital evaluation platform to analyze bifurcation based nonlinear amplifiers. Advances in Radio Science, 0, 14, 47-50.	0.7	1
84	Efficient description of RLC-macromodels with a large number of independent sources for model order reduction. , 2008, , .		0
85	A new optimization approach for the automatic design of Î£Î"-modulators. , 2008, , .		0
86	Ansätze zur Ordnungsreduktion von nichtlinearen Oszillatormodellen zur Anwendung im Schaltungsentwurf. Advances in Radio Science, 0, 8, 151-160.	0.7	0
87	An AC Power-Standard using ZePoC-Coding and feed-forward HF-compensation. , 2011, , .		0
88	Offset elimination in ΣΔ analog to digital converters by ƒ<inf>s</inf>/2 modulation. , 2011, , .		0
89	Model reduction of parasitic coupling networks of mixed-signal VLSI circuits. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2011, 30, 1363-1375.	0.5	0
90	Distortion analysis of nonlinear analog circuits based on a multi-input wiener model considering EMI at arbitrary inputs. , 2012, , .		0

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91	Performance tuning of multi-bit continuous time &#x03A3;&#x0394;-modulators using a switched system model. , 2012, , .		0
92	Efficient network modeling of inductively coupled NFC antennas in medical wireless sensor applications. , 2012, , .		0
93	State space analysis of mixed signal systems with switched feedback and delay. , 2013, , .		0
94	Discrete-time simulation of continuous-time ΣΔ modulators with arbitrary input signals. , 2013, , .		0
95	Some restrictions for the representation of electro-magnetic systems as transmission-line coupled networks. , 2014, , .		0
96	A combined time and frequency domain characterization method for modeling of overvoltage protection elements. , 2015, , .		0
97	A comparison of the Volterra series-based nonlinear S-parameters and X-parameters. , 2015, , .		0
98	Generalization of the jump postulate and Braytonâ€Moser's mixed potential for the analysis of RTD circuits. International Journal of Circuit Theory and Applications, 2016, 44, 185-196.	1.3	0
99	Model order reduction for a full scale grid converter for grid simulations. , 2017, , .		0
100	On the Construction of Dissipative Polynomial Nambu Systems with Limit Cycles. Studies in Systems, Decision and Control, 2018, , 3-15.	0.8	0
101	Steady State Analysis of Crystal Oscillator Circuits Using a Self-consistent Carleman Linearization. , 2018, , .		0
102	Model Reduction Methods for Linear Network Models of Distributed Systems with Sources. Lecture Notes in Electrical Engineering, 2011, , 225-240.	0.3	0
103	Discretization analysis of bifurcation based nonlinear amplifiers. Advances in Radio Science, 0, 15, 43-47.	0.7	0
104	Electrostatic sensor modeling for torque measurements. Advances in Radio Science, 0, 15, 55-60.	0.7	0
105	Eine selbstkonsistente Carleman Linearisierung zur Analyse von Oszillatoren. Advances in Radio Science, 0, 15, 223-230.	0.7	0
106	Order reduction of hierarchical interconnected dynamical systems. Advances in Radio Science, 0, 16, 89-97.	0.7	0