

# Gerd Vandersteen

## List of Publications by Year in descending order

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92  
papers

2,110  
citations

218381

26  
h-index

264894

42  
g-index

92  
all docs

92  
docs citations

92  
times ranked

1301  
citing authors

#	ARTICLE	IF	CITATIONS
1	Estimation of nonparametric noise and FRF models for multivariable systemsâ€™Part I: Theory. Mechanical Systems and Signal Processing, 2010, 24, 573-595.	4.4	157
2	Frequency-domain system identification using non-parametric noise models estimated from a small number of data sets. Automatica, 1997, 33, 1073-1086.	3.0	150
3	Frequency domain system identification using arbitrary signals. IEEE Transactions on Automatic Control, 1997, 42, 1717-1720.	3.6	133
4	Estimation of nonparametric noise and FRF models for multivariable systemsâ€™Part II: Extensions, applications. Mechanical Systems and Signal Processing, 2010, 24, 596-616.	4.4	83
5	Basics of broadband impedance spectroscopy measurements using periodic excitations. Measurement Science and Technology, 2012, 23, 105501.	1.4	71
6	Robustness Issues of the Best Linear Approximation of a Nonlinear System. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 1737-1745.	2.4	70
7	Optimal multisine excitation design for broadband electrical impedance spectroscopy. Measurement Science and Technology, 2011, 22, 115601.	1.4	67
8	Nonparametric Preprocessing in System Identification: a Powerful Tool. European Journal of Control, 2009, 15, 260-274.	1.6	64
9	Experimental Characterization of Operational Amplifiers: A System Identification Approachâ€™ Part I: Theory and Simulations. IEEE Transactions on Instrumentation and Measurement, 2004, 53, 854-862.	2.4	57
10	Improved (non-)parametric identification of dynamic systems excited by periodic signalsâ€™The multivariate case. Mechanical Systems and Signal Processing, 2011, 25, 2892-2922.	4.4	50
11	Novel Estimation of the Electrical Bioimpedance Using the Local Polynomial Method. Application to In Vivo Real-Time Myocardium Tissue Impedance Characterization During the Cardiac Cycle. IEEE Transactions on Biomedical Engineering, 2011, 58, 3376-3385.	2.5	48
12	Multirate Cascaded Discrete-Time Low-Pass $\hat{H}_z$ Modulator for GSM/Bluetooth/UMTS. IEEE Journal of Solid-State Circuits, 2010, 45, 1198-1208.	3.5	43
13	Determining groundwaterâ€™surface water exchange from temperatureâ€™time series: Combining a local polynomial method with a maximum likelihood estimator. Water Resources Research, 2015, 51, 922-939.	1.7	43
14	Non-parametric Estimation of the Frequency-response Functions of the Linear Blocks of a Wiener-Hammerstein Model**The original version of this paper was presented at the 13th IFAC World Congress, which was held in San Francisco, CA during 30 June-5 July 1996. The Published Proceedings of this IFAC Meeting may be ordered from: Elsevier Science Limited, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, U.K. This paper was recommended for publication in revised form by Associate Editor J. Bokor under t. Automatica, 1997, 33, 1351-1355.	3.0	40
15	An identification technique for data acquisition characterization in the presence of nonlinear distortions and time base distortions. IEEE Transactions on Instrumentation and Measurement, 2001, 50, 1355-1363.	2.4	39
16	Analyses, Development, and Applications of TLS Algorithms in Frequency Domain System Identification. SIAM Journal on Matrix Analysis and Applications, 1998, 19, 983-1004.	0.7	38
17	In vivo electrical bioimpedance characterization of human lung tissue during the bronchoscopy procedure. A feasibility study. Medical Engineering and Physics, 2013, 35, 949-957.	0.8	38
18	Spectrally Pure Excitation Signals: Only a Dream?. IEEE Transactions on Instrumentation and Measurement, 2004, 53, 1433-1440.	2.4	37

#	ARTICLE	IF	CITATIONS
19	A sinewave fitting procedure for characterizing data acquisition channels in the presence of time base distortion and time jitter. IEEE Transactions on Instrumentation and Measurement, 1997, 46, 1005-1010.	2.4	36
20	Novel approach of processing electrical bioimpedance data using differential impedance analysis. Medical Engineering and Physics, 2013, 35, 1349-1357.	0.8	33
21	LPMLE3: A novel 1â€ approach to study water flow in streambeds using heat as a tracer. Water Resources Research, 2016, 52, 6596-6610.	1.7	33
22	Measurement and identification of nonlinear systems consisting of linear dynamic blocks and one static nonlinearity. IEEE Transactions on Automatic Control, 1999, 44, 1266-1271.	3.6	32
23	Parametric identification of parallel Wienerâ€ Hammerstein systems. Automatica, 2015, 51, 111-122.	3.0	32
24	Maximum likelihood estimator for jitter noise models [HF sampling scopes]. IEEE Transactions on Instrumentation and Measurement, 2000, 49, 1282-1284.	2.4	31
25	From streambed temperature measurements to spatial-temporal flux quantification: using the LPML method to study groundwater-surface water interaction. Hydrological Processes, 2016, 30, 203-216.	1.1	31
26	Calibration of Direct-Conversion Transceivers. IEEE Journal on Selected Topics in Signal Processing, 2009, 3, 488-498.	7.3	29
27	Structure discrimination in block-oriented models using linear approximations: A theoretic framework. Automatica, 2015, 53, 225-234.	3.0	28
28	Design and Tuning of Coupled-LC mm-Wave Subharmonically Injection-Locked Oscillators. IEEE Transactions on Microwave Theory and Techniques, 2015, 63, 2301-2312.	2.9	26
29	General framework for asymptotic properties of generalized weighted nonlinear least-squares estimators with deterministic and stochastic weighting. IEEE Transactions on Automatic Control, 1996, 41, 1501-1507.	3.6	25
30	Frequency Response Function Measurements Using Concatenated Subrecords With Arbitrary Length. IEEE Transactions on Instrumentation and Measurement, 2012, 61, 2682-2688.	2.4	25
31	Experimental Characterization of Operational Amplifiers: A System Identification Approachâ€ Part II: Calibration and Measurements. IEEE Transactions on Instrumentation and Measurement, 2004, 53, 863-876.	2.4	23
32	Improved (non-)parametric identification of dynamic systems excited by periodic signals. Mechanical Systems and Signal Processing, 2011, 25, 2683-2704.	4.4	23
33	Measuring Nonlinear Effects in Respiratory Mechanics: A Proof of Concept for Prototype Device and Method. IEEE Transactions on Instrumentation and Measurement, 2014, 63, 124-134.	2.4	23
34	Bounding the Polynomial Approximation Errors of Frequency Response Functions. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 1346-1353.	2.4	22
35	A Fan-Based, Low-Frequent, Forced Oscillation Technique Apparatus. IEEE Transactions on Instrumentation and Measurement, 2014, 63, 603-611.	2.4	20
36	Frequency Response Function Estimation in the Presence of Missing Output Data. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 541-553.	2.4	20

#	ARTICLE	IF	CITATIONS
37	Model selection through a statistical analysis of the global minimum of a weighted nonlinear least squares cost function. IEEE Transactions on Signal Processing, 1997, 45, 686-693.	3.2	18
38	Fast identification of Wiener-Hammerstein systems using discrete optimisation. Electronics Letters, 2014, 50, 1942-1944.	0.5	16
39	Linearization of Nonlinear Dynamic Systems. IEEE Transactions on Instrumentation and Measurement, 2004, 53, 1245-1248.	2.4	15
40	Identification of invariants of (over)parameterized models: finite sample results. IEEE Transactions on Automatic Control, 1999, 44, 1073-1077.	3.6	14
41	Why are Nonlinear Microwave Systems Measurements so Involved?. IEEE Transactions on Instrumentation and Measurement, 2004, 53, 726-729.	2.4	14
42	Substrate Noise Coupling Mechanisms in Lightly Doped CMOS Transistors. IEEE Transactions on Instrumentation and Measurement, 2010, 59, 1727-1733.	2.4	14
43	Frequency domain sample maximum likelihood estimation for spatially dependent parameter estimation in PDEs. Automatica, 2014, 50, 2113-2119.	3.0	14
44	On the use of system identification for accurate parametric modeling of nonlinear systems using noisy measurements. IEEE Transactions on Instrumentation and Measurement, 1996, 45, 605-609.	2.4	13
45	Frequency-domain identification of linear systems using arbitrary excitations and a nonparametric noise model. IEEE Transactions on Automatic Control, 1999, 44, 343-347.	3.6	13
46	Estimation of the thermal diffusion coefficient in fusion plasmas taking frequency measurement uncertainties into account. Plasma Physics and Controlled Fusion, 2014, 56, 105004.	0.9	12
47	Respiratory mechanics in children with cystic fibrosis. Biomedical Signal Processing and Control, 2014, 11, 74-79.	3.5	12
48	Estimating Respiratory Impedance at Breathing Frequencies Using Regularized Least Squares on Forced Oscillation Technique Measurements. IEEE Transactions on Instrumentation and Measurement, 2017, 66, 479-491.	2.4	12
49	A measurement-based error-vector-magnitude model to assess non linearity at the system level. , 2017, , .		12
50	Improved FRF Measurements of Lightly Damped Systems Using Local Rational Models. IEEE Transactions on Instrumentation and Measurement, 2018, 67, 1749-1759.	2.4	12
51	Experimental Analysis of the Coupling Mechanisms Between a 4 GHz PPA and a 5-7 GHz LC-VCO. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 2706-2713.	2.4	11
52	An identification algorithm for parallel Wiener-Hammerstein systems. , 2013, , .		11
53	Correcting for non-periodic behaviour in perturbative experiments: application to heat pulse propagation and modulated gas-puff experiments. Plasma Physics and Controlled Fusion, 2020, 62, 094001.	0.9	11
54	LPMLE – A Frequency Domain Method to Estimate Vertical Streambed Fluxes and Sediment Thermal Properties in Semi-infinite and Bounded Domains. Water Resources Research, 2022, 58, .	1.7	11

#	ARTICLE	IF	CITATIONS
55	Frequency Response Matrix Estimation From Missing Input-Output Data. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 3124-3136.	2.4	10
56	Distortion Contribution Analysis With the Best Linear Approximation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 4133-4146.	3.5	10
57	On the use of compensated total least squares in system identification. IEEE Transactions on Automatic Control, 1998, 43, 1436-1441.	3.6	9
58	Heat transfer in a borehole heat exchanger: Frequency domain modeling. International Journal of Heat and Mass Transfer, 2014, 69, 129-139.	2.5	9
59	Accurate estimation of the non-parametric FRF of lightly-damped mechanical systems using arbitrary excitations. Mechanical Systems and Signal Processing, 2019, 130, 545-564.	4.4	9
60	An Automatic Detection Scheme for Periodic Signals Based on Spectrum Analyzer Measurements. IEEE Transactions on Instrumentation and Measurement, 2004, 53, 847-853.	2.4	8
61	An improved sliding-load calibration procedure using a semiparametric circle-fitting procedure. IEEE Transactions on Microwave Theory and Techniques, 1997, 45, 1027-1033.	2.9	7
62	Maximum Likelihood Estimation of diffusion and convection in tokamaks using infinite domains. , 2013, , ,		7
63	Frequency Response Function Measurements via Local Rational Modeling, Revisited. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-16.	2.4	7
64	Finding the dominant source of distortion in two-stage op-amps. Analog Integrated Circuits and Signal Processing, 2014, 78, 153-163.	0.9	6
65	Time-Variant Frequency Response Function Measurement in the Presence of Missing Data. IEEE Transactions on Instrumentation and Measurement, 2017, 66, 3091-3099.	2.4	6
66	New evidence and impact of electron transport non-linearities based on new perturbative inter-modulation analysis. Nuclear Fusion, 2017, 57, 126036.	1.6	6
67	Measuring mixed-signal substrate coupling. IEEE Transactions on Instrumentation and Measurement, 2001, 50, 959-964.	2.4	5
68	An ARMAX Identification Method for Sigma-Delta Modulators Using Only Input-Output Data. IEEE Transactions on Instrumentation and Measurement, 2010, 59, 1007-1012.	2.4	5
69	Estimation of respiratory impedance at low frequencies during spontaneous breathing using the forced oscillation technique. , 2014, 2014, 3410-3.		5
70	Separation of transport in slow and fast time-scales using modulated heat pulse experiments (hysteresis in flux explained). Nuclear Fusion, 2018, 58, 106042.	1.6	5
71	Bias Compensation When Identifying Static Nonlinear Functions Using Averaged Measurements. IEEE Transactions on Instrumentation and Measurement, 2014, 63, 1855-1862.	2.4	4
72	Heat flux reconstruction and effective diffusion estimation from perturbative experiments using advanced filtering and confidence analysis. Nuclear Fusion, 2018, 58, 096036.	1.6	4

#	ARTICLE	IF	CITATIONS
73	A systematic approach to optimize excitations for perturbative transport experiments. Physics of Plasmas, 2018, 25, .	0.7	4
74	Estimating Parameterized Scalable Models From the Best Linear Approximation of Nonlinear Systems for Accurate High-Level Simulations. IEEE Transactions on Instrumentation and Measurement, 2006, 55, 1186-1191.	2.4	3
75	A mm-wave 40 nm CMOS subharmonically injection-locked QVCO with lock detection. , 2013, , .		3
76	Frequency Response Matrix Estimation From Partially Missing Dataâ€”for Periodic Inputs. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 3615-3628.	2.4	3
77	A novel frequency domain maximum likelihood approach for estimating transport coefficients in cylindrical geometry for nuclear fusion devices. , 2019, , .		3
78	Comparative study of a fully differential op amp in FinFET and planar technologies. , 2014, , .		2
79	Distortion contribution analysis of strongly non-linear analog circuits. , 2016, , .		2
80	An Improved Describing Function With Applications for OTA-Based Circuits. IEEE Transactions on Circuits and Systems I: Regular Papers, 2017, 64, 1748-1757.	3.5	2
81	Adaptive Excitation Signals for Low-Frequency Forced Oscillation Technique Measurements in Patients. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-9.	2.4	2
82	Forced Oscillation Technique Measurement Apparatus Using Fan-Speaker Hybrid. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-9.	2.4	2
83	Broadband high-frequency hybrid. IEEE Transactions on Instrumentation and Measurement, 2002, 51, 1204-1209.	2.4	1
84	Common-denominator modelling for stability analysis of electronic circuits. , 2016, , .		1
85	Impact of the Missing Data Pattern, the Oversampling, the Noise Level, and the Excitation on Nonparametric Frequency Response Function Estimates. IFAC-PapersOnLine, 2018, 51, 1002-1007.	0.5	1
86	Experimentally driven demystification of system identification for nonlinear mechanical systems. IEEE Instrumentation and Measurement Magazine, 2018, 21, 16-25.	1.2	1
87	FRF Measurements Subject to Missing Data: Quantification of Noise, Nonlinear Distortion, and Time-Varying Effects. IEEE Transactions on Instrumentation and Measurement, 2019, 68, 4175-4187.	2.4	1
88	Precompensation of Supply Dynamics of Dynamic Power Supply Transmitters Using a Linear Parameter-Varying Model. IEEE Transactions on Microwave Theory and Techniques, 2019, 67, 278-287.	2.9	1
89	Frequency Response Function Measurements of Multivariable Systems via Local Rational Modeling. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-9.	2.4	1
90	Identification of a Noninsulated Distillation Column From Transient Response Data. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 1382-1391.	2.4	0

#	ARTICLE	IF	CITATIONS
91	Wideband Distortion Contribution Analysis of analog circuits with differential signalling. , 2015, , .		0
92	A simplified approach to concurrent dual-band power amplifiers digital predistortion. , 2016, , .		0