

Johan Schoukens

List of Publications by Year in descending order

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123
papers

5,560
citations

156536

32
h-index

156644

58
g-index

149
all docs

149
docs citations

149
times ranked

2803
citing authors

#	ARTICLE	IF	CITATIONS
1	Data-driven generation of synthetic wind speeds: A comparative study. IET Renewable Power Generation, 2022, 16, 922-932.	1.7	1
2	A frequency domain approach for local module identification in dynamic networks. Automatica, 2022, 142, 110370.	3.0	6
3	Decoupling multivariate functions using a nonparametric filtered tensor decomposition. Mechanical Systems and Signal Processing, 2022, 179, 109328.	4.4	2
4	One-Bit Constrained Measurements of Parametric Signals. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-13.	2.4	6
5	Retrieving highly structured models starting from black-box nonlinear state-space models using polynomial decoupling. Mechanical Systems and Signal Processing, 2021, 146, 106966.	4.4	10
6	Decoupling multivariate functions using a non-parametric Filtered CPD approach. IFAC-PapersOnLine, 2021, 54, 451-456.	0.5	8
7	Real-time feedback control of the impurity emission front in tokamak divertor plasmas. Nature Communications, 2021, 12, 1105.	5.8	28
8	Decoupling P-NARX models using filtered CPD. IFAC-PapersOnLine, 2021, 54, 661-666.	0.5	1
9	One-Bit Sine-Fit. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-12.	2.4	3
10	Quick Estimation of Periodic Signal Parameters From 1-Bit Measurements. IEEE Transactions on Instrumentation and Measurement, 2020, 69, 339-353.	2.4	18
11	Frequency and Amplitude Domain DAC-ADC Co-Testing Using Ternary Signals. IEEE Transactions on Instrumentation and Measurement, 2020, 69, 4042-4055.	2.4	2
12	Extending the Best Linear Approximation Framework to the Process Noise Case. IEEE Transactions on Automatic Control, 2020, 65, 1514-1524.	3.6	9
13	Synthetic wind speed generation for the simulation of realistic diurnal cycles. Journal of Physics: Conference Series, 2020, 1618, 062019.	0.3	2
14	User-friendly nonlinear nonparametric estimation framework for vibro-acoustic industrial measurements with multiple inputs. Mechanical Systems and Signal Processing, 2020, 145, 106926.	4.4	18
15	Simplified Analysis for Multiple Input Systems: A Toolbox Study Illustrated on F-16 Measurements. Vibration, 2020, 3, 70-84.	0.9	12
16	Tuning nonlinear state-space models using unconstrained multiple shooting. IFAC-PapersOnLine, 2020, 53, 334-340.	0.5	4
17	A 1.5-Bit DFT Analyzer. IEEE Transactions on Instrumentation and Measurement, 2020, , 1-1.	2.4	3
18	Decoupling Multivariate Polynomials for Nonlinear State-Space Models. , 2019, 3, 745-750.		14

#	ARTICLE	IF	CITATIONS
19	Frequency Response Functions, Uncertainty Estimates, Localization of Resonances, and Model Validation. , 2019, , .		0
20	Tactile sensor-based real-time clustering for tissue differentiation. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 129-137.	1.7	2
21	Nonlinear System Identification: A User-Oriented Road Map. IEEE Control Systems, 2019, 39, 28-99.	1.0	241
22	Approximate decoupling of multivariate polynomials using weighted tensor decomposition. Numerical Linear Algebra With Applications, 2018, 25, e2135.	0.9	3
23	Modeling the Nonlinear Cortical Response in EEG Evoked by Wrist Joint Manipulation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 205-215.	2.7	14
24	Parameter reduction in nonlinear state-space identification of hysteresis. Mechanical Systems and Signal Processing, 2018, 104, 884-895.	4.4	25
25	Using Decoupling Methods to Reduce Polynomial NARX Models. IFAC-PapersOnLine, 2018, 51, 796-801.	0.5	13
26	Multiple-Input Single-Output Polynomial Nonlinear State-Space Model of the Li-ion Battery's Short-term Dynamics. IFAC-PapersOnLine, 2018, 51, 497-502.	0.5	2
27	Joint Measurement of Signal Parameters and ADC Transition Levels. IEEE Transactions on Instrumentation and Measurement, 2018, 67, 2752-2760.	2.4	2
28	Nonparametric Data-Driven Modeling of Linear Systems: Estimating the Frequency Response and Impulse Response Function. IEEE Control Systems, 2018, 38, 49-88.	1.0	36
29	Structure Detection of Wiener's Hammerstein Systems With Process Noise. IEEE Transactions on Instrumentation and Measurement, 2017, 66, 569-576.	2.4	20
30	Regularized nonparametric Volterra kernel estimation. Automatica, 2017, 82, 324-327.	3.0	53
31	Tensor methods for MIMO decoupling and control design using frequency response functions. Mechatronics, 2017, 45, 71-81.	2.0	13
32	A Local Polynomial Approach to Nonparametric Estimation of the Best Linear Approximation of Lithium-Ion Battery From Multiple Datasets. , 2017, 1, 182-187.		5
33	Filter-based regularisation for impulse response modelling. IET Control Theory and Applications, 2017, 11, 194-204.	1.2	33
34	Data-Driven Nonlinear Identification of Li-Ion Battery Based on a Frequency Domain Nonparametric Analysis. IEEE Transactions on Control Systems Technology, 2017, 25, 1825-1832.	3.2	34
35	Practical Issues in the Synthesis of Ternary Sequences. IEEE Transactions on Instrumentation and Measurement, 2017, 66, 212-222.	2.4	18
36	Measuring the Noise Cumulative Distribution Function Using Quantized Data. IEEE Transactions on Instrumentation and Measurement, 2016, 65, 1540-1546.	2.4	6

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37	D-optimal input design for nonlinear FIR-type systems: A dispersion-based approach. Automatica, 2016, 73, 88-100.	3.0	13
38	Linear System Identification in a Nonlinear Setting: Nonparametric Analysis of the Nonlinear Distortions and Their Impact on the Best Linear Approximation. IEEE Control Systems, 2016, 36, 38-69.	1.0	83
39	Information matrix and D-optimal design with Gaussian inputs for Wiener model identification. Automatica, 2016, 69, 65-77.	3.0	19
40	Recursive Discrete-Time Models for Continuous-Time Systems Under Band-Limited Assumptions. IEEE Transactions on Instrumentation and Measurement, 2016, 65, 713-723.	2.4	5
41	The transient impulse response modeling method for non-parametric system identification. Automatica, 2016, 68, 314-328.	3.0	13
42	Using the Best Linear Approximation With Varying Excitation Signals for Nonlinear System Characterization. IEEE Transactions on Instrumentation and Measurement, 2016, 65, 1271-1280.	2.4	13
43	Information and Statistical Efficiency When Quantizing Noisy DC Values. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 308-317.	2.4	10
44	Decoupling static nonlinearities in a parallel Wiener-Hammerstein system: A first-order approach. , 2015, , .		8
45	Accurate Sine-Wave Amplitude Measurements Using Nonlinearly Quantized Data. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 3201-3208.	2.4	7
46	Nonparametric Time-Domain Identification of Linear Slowly Time-Variant Systems Using B-Splines. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 252-262.	2.4	11
47	Structure discrimination in block-oriented models using linear approximations: A theoretic framework. Automatica, 2015, 53, 225-234.	3.0	28
48	Nonparametric estimation of a time-variant system: An experimental study of B-splines and the regularization based smoothing. , 2015, , .		3
49	Parametric System Identification Using Quantized Data. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 2312-2322.	2.4	20
50	Decoupling Multivariate Polynomials Using First-Order Information and Tensor Decompositions. SIAM Journal on Matrix Analysis and Applications, 2015, 36, 864-879.	0.7	47
51	A Rigorous Analysis of Least Squares Sine Fitting Using Quantized Data: The Random Phase Case. IEEE Transactions on Instrumentation and Measurement, 2014, 63, 512-530.	2.4	10
52	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
53	A first study of using B-splines in nonparametric system identification. , 2013, , .		10
54	Structured non-linear noise behaviour and the use of median averaging in non-linear systems with sequence inputs. IET Control Theory and Applications, 2013, 7, 997-1004.	1.2	2

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55	Frequency domain-based nonlinearity detection and compensation in Lur'e systems. International Journal of Robust and Nonlinear Control, 2013, 23, 1168-1182.	2.1	14
56	Bounding the Polynomial Approximation Errors of Frequency Response Functions. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 1346-1353.	2.4	22
57	From coupled to decoupled polynomial representations in parallel Wiener-Hammerstein models. , 2013, , .		13
58	FRF Measurement of Nonlinear Systems Operating in Closed Loop. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 1334-1345.	2.4	27
59	Design of Quasi-Logarithmic Multisine Excitations for Robust Broad Frequency Band Measurements. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 1364-1372.	2.4	22
60	Design of Multilevel Signals for Identifying the Best Linear Approximation of Nonlinear Systems. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 519-524.	2.4	9
61	Frequency Response Function Measurements Using Concatenated Subrecords With Arbitrary Length. IEEE Transactions on Instrumentation and Measurement, 2012, 61, 2682-2688.	2.4	25
62	Estimation of the FRF Through the Improved Local Bandwidth Selection in the Local Polynomial Method. IEEE Transactions on Instrumentation and Measurement, 2012, 61, 2833-2843.	2.4	6
63	Identification of time-varying systems using a two-dimensional B-spline algorithm. , 2012, , .		10
64	Estimation of the period and spectral content of multi-frequency signals using minimal data without user interaction. , 2012, , .		0
65	Single and Piecewise Polynomials for Modeling of Pitched Sounds. IEEE Transactions on Audio Speech and Language Processing, 2012, 20, 1270-1281.	3.8	7
66	Analysis of Best Linear Approximation of a Wiener-Hammerstein System for Arbitrary Amplitude Distributions. IEEE Transactions on Instrumentation and Measurement, 2012, 61, 645-654.	2.4	33
67	Detecting and analyzing non-linear effects in respiratory impedance measurements. , 2011, , .		9
68	The Use of Nonparametric Noise Models Extracted From Overlapping Subrecords for System Identification. IEEE Transactions on Signal Processing, 2011, 59, 4635-4647.	3.2	2
69	Frequency domain based friction compensation - Industrial application to transmission electron microscopes -, 2011, , .		5
70	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
71	User friendly Box-Jenkins identification using nonparametric noise models. , 2011, , .		13
72	On The Polynomial Approximation for Time-Variant Harmonic Signal Modeling. IEEE Transactions on Audio Speech and Language Processing, 2011, 19, 458-467.	3.8	8

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73	Nonlinear system-identification of the filling phase of a wet-clutch system. Control Engineering Practice, 2011, 19, 1506-1516.	3.2	35
74	Weighted LS estimation of spectral contents and periodicity of signals comprising multi-frequency components. , 2011, , .		2
75	Nonlinear Induced Variance of Frequency Response Function Measurements. IEEE Transactions on Instrumentation and Measurement, 2010, 59, 2468-2474.	2.4	10
76	Study of the Variance of Parametric Estimates of the Best Linear Approximation of Nonlinear Systems. IEEE Transactions on Instrumentation and Measurement, 2010, 59, 3159-3167.	2.4	16
77	Identification of nonlinear systems using Polynomial Nonlinear State Space models. Automatica, 2010, 46, 647-656.	3.0	266
78	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
79	Two nonlinear optimization methods for black box identification compared. Automatica, 2010, 46, 1675-1681.	3.0	24
80	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
81	Nuclear norm regularization for overparametrized Hammerstein systems. , 2010, , .		9
82	Estimation of Nonparametric Noise Models for Linear Dynamic Systems. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 2468-2474.	2.4	9
83	Robustness Issues of the Best Linear Approximation of a Nonlinear System. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 1737-1745.	2.4	70
84	Optimal Settings for Measuring Frequency Response Functions With Weighted Overlapped Segment Averaging. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 3276-3287.	2.4	27
85	On the Elimination of Bias Averaging-Errors in Proxy Records. Mathematical Geosciences, 2009, 41, 129-144.	1.4	9
86	Blind Maximum-Likelihood Identification of Wiener Systems. IEEE Transactions on Signal Processing, 2009, 57, 3017-3029.	3.2	55
87	Nonparametric Preprocessing in System Identification: a Powerful Tool. European Journal of Control, 2009, 15, 260-274.	1.6	64
88	A Nonlinear Block Structure Identification Procedure Using Frequency Response Function Measurements. IEEE Transactions on Instrumentation and Measurement, 2008, 57, 2257-2264.	2.4	26
89	Frequency-Domain, Errors-in-Variables Estimation of Linear Dynamic Systems Using Data From Overlapping Subrecords. IEEE Transactions on Instrumentation and Measurement, 2008, 57, 1529-1536.	2.4	16
90	Identification of a Block-Structured Nonlinear Feedback System, Applied to a Microwave Crystal Detector. IEEE Transactions on Instrumentation and Measurement, 2008, 57, 1734-1740.	2.4	34

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91	Application of Blind Identification to Nonlinear Calibration. IEEE Transactions on Instrumentation and Measurement, 2008, 57, 1771-1778.	2.4	6
92	Detection of Unmodeled Nonlinearities Using Correlation Methods. Conference Record - IEEE Instrumentation and Measurement Technology Conference, 2007, , .	0.0	4
93	Water mass distributions in the Southern Ocean derived from a parametric analysis of mixing water masses. Journal of Geophysical Research, 2007, 112, .	3.3	10
94	A comprehensive study of the bias and variance of frequency-response-function measurements: Optimal window selection and overlapping strategies. Automatica, 2007, 43, 1723-1736.	3.0	67
95	<pre><title></title> <publication_date> </publication_date> </month> </year> </year> </publication_date> </pages> <first_page>679</first_page> <last_page>680</last_page> </pages> <publisher_item> <item_number item_number_type= 'arNumber' >4200994</item_number> </publisher_item> <doi_data> <doi>10.1109/TIM.2007.895578</doi> <resource>http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=4200994</resource> </doi_data> </journal_article> </journal_article> <titles> <title><![CDATA[Measuring Nonlinear Diff</pre>	2.4	1
96	Fast Measurement of Quantization Distortions in DSP Algorithms. IEEE Transactions on Instrumentation and Measurement, 2007, 56, 1917-1923.	2.4	3
97	Analysis of windowing/leakage effects in frequency response function measurements. Automatica, 2006, 42, 27-38.	3.0	71
98	Optimized Excitation Signals for MIMO Frequency Response Function Measurements. IEEE Transactions on Instrumentation and Measurement, 2006, 55, 2072-2079.	2.4	39
99	Continuous-Time Noise Modeling From Sampled Data. IEEE Transactions on Instrumentation and Measurement, 2006, 55, 2253-2258.	2.4	28
100	Nonlinear system identification on a combine harvester. , 2006, , .		6
101	Modified AIC and MDL Model Selection Criteria for Short Data Records. IEEE Transactions on Instrumentation and Measurement, 2005, 54, 144-150.	2.4	68
102	Reduction of the Gibbs Phenomenon Applied on Nonharmonic Time Base Distortions. IEEE Transactions on Instrumentation and Measurement, 2005, 54, 1118-1125.	2.4	14
103	Hammersteinâ€“Wiener system estimator initialization. Automatica, 2004, 40, 1543-1550.	3.0	64
104	Decoding nonlinear growth rates in biogenic environmental archives. Geochemistry, Geophysics, Geosystems, 2004, 5, n/a-n/a.	1.0	22
105	Fully automated spectral analysis of periodic signals. IEEE Transactions on Instrumentation and Measurement, 2003, 52, 1021-1024.	2.4	59
106	Fast approximate identification of nonlinear systems. Automatica, 2003, 39, 1267-1274.	3.0	100
107	An improved multiple internal standard normalisation for drift in LA-ICP-MS measurements. Journal of Analytical Atomic Spectrometry, 2002, 17, 1461-1470.	1.6	16
108	MEASUREMENT AND MODELLING OF LINEAR SYSTEMS IN THE PRESENCE OF NON-LINEAR DISTORTIONS. Mechanical Systems and Signal Processing, 2002, 16, 785-801.	4.4	52

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109	Frequency domain system identification with missing data. IEEE Transactions on Automatic Control, 2000, 45, 364-369.	3.6	36
110	Study of conditional ML estimators in time and frequency-domain system identification. Automatica, 1999, 35, 91-100.	3.0	23
111	Parametric and nonparametric identification of linear systems in the presence of nonlinear distortions-a frequency domain approach. IEEE Transactions on Automatic Control, 1998, 43, 176-190.	3.6	227
112	Comparison of two feedforward design methods aiming at accurate trajectory tracking of the end point of a flexible robot arm. IEEE Transactions on Control Systems Technology, 1998, 6, 2-14.	3.2	66
113	Frequency domain system identification using arbitrary signals. IEEE Transactions on Automatic Control, 1997, 42, 1717-1720.	3.6	133
114	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
115	Accurate Estimation of Multivariable Frequency Response Functions. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1996, 29, 4351-4356.	0.4	24
116	Identification of linear dynamic systems using piecewise constant excitations: Use, misuse and alternatives. Automatica, 1994, 30, 1153-1169.	3.0	88
117	Nonparametric frequency response function estimators based on nonlinear averaging techniques. IEEE Transactions on Instrumentation and Measurement, 1992, 41, 739-746.	2.4	54
118	Frequency Domain System Identification Toolbox for MATLAB. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1991, 24, 1243-1247.	0.4	23
119	Crest-factor minimization using nonlinear Chebyshev approximation methods. IEEE Transactions on Instrumentation and Measurement, 1991, 40, 982-989.	2.4	203
120	Survey of excitation signals for FFT based signal analyzers. IEEE Transactions on Instrumentation and Measurement, 1988, 37, 342-352.	2.4	148
121	Identification of Volterra kernels using interpolation. , 0, , .		1
122	Design of broadband excitation signals with a user imposed power spectrum and amplitude distribution. , 0, , .		41
123	Modified AIC and MDL model selection criteria for short data records. , 0, , .		1