

Mats Viberg

List of Publications by Year in descending order

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160
papers

9,074
citations

136950

32
h-index

82547

72
g-index

164
all docs

164
docs citations

164
times ranked

4233
citing authors

#	ARTICLE	IF	CITATIONS
1	Two decades of array signal processing research: the parametric approach. IEEE Signal Processing Magazine, 1996, 13, 67-94.	5.6	3,548
2	Sensor array processing based on subspace fitting. IEEE Transactions on Signal Processing, 1991, 39, 1110-1121.	5.3	568
3	Subspace-based methods for the identification of linear time-invariant systems. Automatica, 1995, 31, 1835-1851.	5.0	517
4	Detection and estimation in sensor arrays using weighted subspace fitting. IEEE Transactions on Signal Processing, 1991, 39, 2436-2449.	5.3	408
5	Blind separation of synchronous co-channel digital signals using an antenna array. I. Algorithms. IEEE Transactions on Signal Processing, 1996, 44, 1184-1197.	5.3	297
6	Exact and Large Sample Maximum Likelihood Techniques for Parameter Estimation and Detection in Array Processing. Springer Series in Information Sciences, 1993, , 99-151.	1.3	240
7	An adaptive array for mobile communication systems. IEEE Transactions on Vehicular Technology, 1991, 40, 230-236.	6.3	233
8	Performance analysis of the total least squares ESPRIT algorithm. IEEE Transactions on Signal Processing, 1991, 39, 1122-1135.	5.3	232
9	Blind estimation of multiple co-channel digital signals using an antenna array. IEEE Signal Processing Letters, 1994, 1, 29-31.	3.6	168
10	A first-order statistical method for channel estimation. IEEE Signal Processing Letters, 2003, 10, 57-60.	3.6	166
11	Computationally efficient angle estimation for signals with known waveforms. IEEE Transactions on Signal Processing, 1995, 43, 2154-2163.	5.3	163
12	Analysis of subspace fitting and ML techniques for parameter estimation from sensor array data. IEEE Transactions on Signal Processing, 1992, 40, 590-600.	5.3	148
13	A Bayesian approach to auto-calibration for parametric array signal processing. IEEE Transactions on Signal Processing, 1994, 42, 3495-3507.	5.3	142
14	Analysis of state space system identification methods based on instrumental variables and subspace fitting. Automatica, 1997, 33, 1603-1616.	5.0	106
15	Maximum likelihood array processing in spatially correlated noise fields using parameterized signals. IEEE Transactions on Signal Processing, 1997, 45, 996-1004.	5.3	101
16	Maximum likelihood parameter and rank estimation in reduced-rank multivariate linear regressions. IEEE Transactions on Signal Processing, 1996, 44, 3069-3078.	5.3	93
17	Self-interference suppression in full-duplex MIMO relays. , 2010, , .		87
18	Maximum likelihood array processing for stochastic coherent sources. IEEE Transactions on Signal Processing, 1996, 44, 96-105.	5.3	81

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19	Analysis of the combined effects of finite samples and model errors on array processing performance. IEEE Transactions on Signal Processing, 1994, 42, 3073-3083.	5.3	65
20	On the asymptotic performance analysis of subspace DOA estimation in the presence of modeling errors: case of MUSIC. IEEE Transactions on Signal Processing, 2006, 54, 907-920.	5.3	64
21	Subspace fitting with diversely polarized antenna arrays. IEEE Transactions on Antennas and Propagation, 1993, 41, 1687-1694.	5.1	60
22	Statistical Analysis of the MUSIC Algorithm in the Presence of Modeling Errors, Taking Into Account the Resolution Probability. IEEE Transactions on Signal Processing, 2010, 58, 4156-4166.	5.3	59
23	Performance analysis of direction finding with large arrays and finite data. IEEE Transactions on Signal Processing, 1995, 43, 469-477.	5.3	58
24	Array processing in correlated noise fields based on instrumental variables and subspace fitting. IEEE Transactions on Signal Processing, 1995, 43, 1187-1199.	5.3	58
25	Least-Squares based channel estimation for MIMO relays. , 2008, , .		57
26	Simultaneous information and power transfer under a non-linear RF energy harvesting model. , 2017, , .		46
27	Separable non-linear least-squares minimization-possible improvements for neural net fitting. , 0, , .		41
28	Efficient Channel Estimation Techniques for Amplify and Forward Relaying Systems. IEEE Transactions on Communications, 2012, 60, 3150-3155.	7.8	40
29	Sequential Bayesian Sparse Signal Reconstruction Using Array Data. IEEE Transactions on Signal Processing, 2013, 61, 6344-6354.	5.3	39
30	Sensitivity of parametric direction finding to colored noise fields and undermodeling. Signal Processing, 1993, 34, 207-222.	3.7	38
31	Analysis of subspace fitting based methods for sensor array processing. , 0, , .		37
32	Maximum-likelihood bearing estimation with partly calibrated arrays in spatially correlated noise fields. IEEE Transactions on Signal Processing, 1996, 44, 888-899.	5.3	37
33	DOA Estimation Methods and Algorithms. Academic Press Library in Signal Processing, 2014, 3, 599-650.	0.8	37
34	Massive MIMO Systems With IQ Imbalance: Channel Estimation and Sum Rate Limits. IEEE Transactions on Communications, 2017, 65, 2382-2396.	7.8	37
35	Subspace based approaches for Wiener system identification. IEEE Transactions on Automatic Control, 2005, 50, 1629-1634.	5.7	35
36	Throughput Optimization for MISO Interference Channels via Coordinated User-Specific Tilting. IEEE Communications Letters, 2012, 16, 1248-1251.	4.1	35

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37	Partial Relaxation Approach: An Eigenvalue-Based DOA Estimator Framework. IEEE Transactions on Signal Processing, 2018, 66, 6190-6203.	5.3	35
38	Compensation for Nonlinearity in a Hammerstein System Using the Coherence Function With Application to Nonlinear Acoustic Echo Cancellation. IEEE Transactions on Signal Processing, 2007, 55, 5853-5858.	5.3	33
39	On the Resolution Probability of MUSIC in Presence of Modeling Errors. IEEE Transactions on Signal Processing, 2008, 56, 1945-1953.	5.3	33
40	Adaptive neural nets filter using a recursive Levenberg-Marquardt search direction. , 0, , .		30
41	A wideband spectrum sensing method for cognitive radio using sub-Nyquist sampling. , 2011, , .		29
42	A statistical perspective on state-space modeling using subspace methods. , 0, , .		25
43	A computationally efficient method for joint direction finding and frequency estimation in colored noise. , 0, , .		25
44	Subspace fitting concepts in sensor array processing. Signal Processing, 1990, 19, 345.	3.7	24
45	Calibration in Array Processing. , 2009, , 93-124.		23
46	Bayesian Approach to Channel Estimation for AF MIMO Relaying Systems. IEEE Journal on Selected Areas in Communications, 2012, 30, 1440-1451.	14.0	23
47	New Approaches for Channel Prediction Based on Sinusoidal Modeling. Eurasip Journal on Advances in Signal Processing, 2006, 2007, 1.	1.7	22
48	Performance Prediction of Maximum-Likelihood Direction-of-Arrival Estimation in the Presence of Modeling Errors. IEEE Transactions on Signal Processing, 2008, 56, 4785-4793.	5.3	19
49	A NLLS based sub-nyquist rate spectrum sensing for wideband cognitive radio. , 2011, , .		19
50	Element position considerations for robust direction finding using sparse arrays. , 0, , .		18
51	Superimposed periodic pilots for blind channel estimation. , 2001, , .		18
52	Subspace-based state-space system identification. Circuits, Systems, and Signal Processing, 2002, 21, 23-37.	2.0	17
53	Calibrating an Array with Scan Dependent Errors Using a Sparse Grid. , 2006, , .		17
54	Performance analysis of relay channel estimation. , 2009, , .		17

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55	Peak-to-Average-Power-Ratio (PAPR) reduction in WiMAX and OFDM/A systems. Eurasip Journal on Advances in Signal Processing, 2011, 2011, .	1.7	17
56	Sensor array processing using gated signals. IEEE Transactions on Acoustics, Speech, and Signal Processing, 1989, 37, 447-450.	2.0	16
57	Fast LASSO based DOA tracking. , 2011, , .		16
58	Fast Candidate Points Selection in the LASSO Path. IEEE Signal Processing Letters, 2012, 19, 79-82.	3.6	16
59	Stochastic maximum likelihood estimation in sensor arrays by weighted subspace fitting. , 1989, , .		13
60	Direction-of-arrival estimation and detection using weighted subspace fitting. , 1989, , .		13
61	Long-Range Channel Prediction Based on Nonstationary Parametric Modeling. IEEE Transactions on Signal Processing, 2009, 57, 622-634.	5.3	13
62	Introduction to Array Processing. Academic Press Library in Signal Processing, 2014, 3, 463-502.	0.8	13
63	Coordinated single-cell vs multi-cell transmission with limited-capacity backhaul. , 2010, , .		12
64	Estimation of resonant frequencies and quality factors from time domain computations. Journal of Computational Physics, 2003, 192, 523-545.	3.8	11
65	Impact of Base Station Antenna Tilt on the Performance of Network MIMO Systems. , 2012, , .		11
66	An Improved Doa Estimator Based on Partial Relaxation Approach. , 2018, , .		11
67	Asymptotic robustness of sensor array processing methods. , 0, , .		10
68	Reception of multiple co-channel digital signals using antenna arrays with applications to PCS. , 0, , .		10
69	Regularized optimization for joint super-resolution and high dynamic range image reconstruction in a perceptually uniform domain. , 2012, , .		10
70	Weighted LS and TLS approaches yield asymptotically equivalent results. Signal Processing, 1995, 45, 255-259.	3.7	9
71	Data-Adaptive Array Interpolation for DOA Estimation in Correlated Signal Environments. , 0, , .		9
72	CLEAN technique in strip-map SAR for high-quality imaging. , 2009, , .		9

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73	Maximum a posteriori based regularization parameter selection. , 2011, , .		9
74	Optimal aperture distribution for near-field detection of foreign objects in lossy media. , 2014, , .		9
75	Transmission Strategies for Remote Estimation With an Energy Harvesting Sensor. IEEE Transactions on Wireless Communications, 2017, 16, 4390-4403.	9.2	9
76	Local modeling and robust estimation for high-resolution direction finding. , 0, , .		7
77	Performance of decoupled direction finding based on blind signal separation. , 0, , .		7
78	Adaptive data reduction for signals observed in spatially colored noise. Signal Processing, 2000, 80, 1823-1831.	3.7	7
79	Array interpolation based on Local Polynomial Approximation with application to DOA estimation using weighted MUSIC. , 2009, , .		7
80	On the resolution of The LASSO-based DOA estimation method. , 2011, , .		7
81	Coordinated user scheduling in the multi-cell MIMO downlink. , 2011, , .		7
82	A numerical implementation of gridless compressed sensing. , 2015, , .		7
83	Analysis of algorithms for sensor arrays with invariance structure. , 0, , .		6
84	Instrumental variable subspace tracking with applications to sensor array processing and frequency estimation. , 0, , .		6
85	Channel Tracking for AF MIMO Relaying Systems. , 2012, , .		6
86	Global monitoring of fluidized-bed processes by means of microwave cavity resonances. Measurement: Journal of the International Measurement Confederation, 2014, 55, 520-535.	5.0	6
87	Improved DOA estimators using partial relaxation approach. , 2017, , .		6
88	Compressed Sensing for the Detection and Positioning of Dielectric Objects Inside Metal Enclosures by Means of Microwave Measurements. IEEE Transactions on Microwave Theory and Techniques, 2018, 66, 462-476.	4.6	6
89	Cram�r-Rao Bound for DOA Estimators Under the Partial Relaxation Framework: Derivation and Comparison. IEEE Transactions on Signal Processing, 2020, 68, 3194-3208.	5.3	6
90	Optimal localization of partially known signals in unknown noise fields. , 0, , .		5

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91	Asymptotic Properties of Nonlinear Weighted Least Squares in Radar Array Processing. IEEE Transactions on Signal Processing, 2004, 52, 3083-3095.	5.3	5
92	3D Face Recognition Using Affine Integral Invariants. , 0, , .		5
93	Optimized Beamforming Calibration in the Presence of Array Imperfections. , 2007, , .		5
94	A new method based on dynamic programming for boundary detection in ultrasound image sequences. , 2008, 2008, 3072-4.		5
95	Bayesian Channel Estimation Techniques for AF MIMO Relaying Systems. , 2011, , .		5
96	Sensor Array and Multichannel Signal Processing [In the Spotlight]. IEEE Signal Processing Magazine, 2011, 28, 157-158.	5.6	5
97	Array response interpolation and DOA estimation with array response decomposition. Signal Processing, 2016, 125, 97-109.	3.7	5
98	Performance Analysis of Sparsity-Based Parameter Estimation. IEEE Transactions on Signal Processing, 2017, 65, 6478-6488.	5.3	5
99	Remote Estimation of Correlated Sources Under Energy Harvesting Constraints. IEEE Transactions on Wireless Communications, 2018, 17, 5300-5313.	9.2	5
100	Reconstruction of Clipped Signals in Quantized Uplink Massive MIMO Systems. IEEE Transactions on Communications, 2020, 68, 2891-2905.	7.8	5
101	Asymptotic Analysis Of The Total Least Squares ESPRIT Algorithm'. Proceedings of SPIE, 1989, , .	0.8	4
102	ESPRIT And Uniform Linear Arrays. Proceedings of SPIE, 1989, , .	0.8	4
103	A Bayesian approach to direction finding with parametric array uncertainty. , 0, , .		4
104	Two decades of statistical array processing. , 0, , .		4
105	Two new approaches to channel prediction based on sinusoidal modelling. , 2005, , .		4
106	Models and Predictions of Scattered Radio Waves on Rough Surfaces. , 2007, , .		4
107	Broadband ML estimation under model order uncertainty. Signal Processing, 2010, 90, 1350-1356.	3.7	4
108	Parametrization of acoustic images for the detection of human presence by mobile platforms. , 2010, , .		4

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109	A new method to compute optimal periodic sampling patterns. , 2011, , .		4
110	Array Processing in the Face of Nonidealities. Academic Press Library in Signal Processing, 2014, 3, 819-857.	0.8	4
111	Downlink performance of regularized ZF in massive MIMO systems subject to IQ imbalance. , 2017, , .		4
112	Direction finding with a dually polarized antenna array using path-wise constraints with application to real data. , 0, , .		3
113	Region-Based Statistical Background Modeling for Foreground Object Segmentation. , 2006, , .		3
114	Adaptive beamforming using calibration vectors with unknown gain and phase. , 2007, , .		3
115	Adaptive channel prediction based on polynomial phase signals. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	3
116	A novel method of DOA tracking by penalized least squares. , 2013, , .		3
117	Gridless compressive sensing. , 2014, , .		3
118	Array calibration using array response interpolation and parametric modeling. , 2015, , .		3
119	Maximum Aperture Power Transmission in Lossy Homogeneous Matters. IEEE Antennas and Wireless Propagation Letters, 2015, 14, 175-178.	4.0	3
120	Optimal array signal processing in the presence of coherent wavefronts. , 0, , .		2
121	Estimation of damped and undamped sinusoids with application to analysis of electromagnetic FDTD simulation data 1. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 1351-1356.	0.4	2
122	Two-Step Esprit with Compensation for Modelling Errors using a Sparse Calibration Grid. , 2007, , .		2
123	Transmit and receive filter optimization for wideband MIMO radar. , 2011, , .		2
124	Low PAPR waveform synthesis with application to wideband MIMO radar. , 2011, , .		2
125	Multimode Transmission in Network MIMO Downlink with Incomplete CSI. Eurasip Journal on Advances in Signal Processing, 2011, 2011, .	1.7	2
126	Eigenbeam transmission over line-of-sight MIMO channels for fixed microwave links. , 2011, , .		2

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127	Robust transceiver design for wideband MIMO radar utilizing a subarray antenna structure. Signal Processing, 2013, 93, 3541-3552.	3.7	2
128	Wireless information and power transfer in MIMO channels under Rician fading. , 2015, , .		2
129	Performance bounds for remote estimation with an energy harvesting sensor. , 2016, , .		2
130	Hybrid beamforming in uplink massive MIMO systems in the presence of blockers. , 2017, , .		2
131	Microwave measurement system for dispersive dielectric properties of densely packed pellets. Measurement: Journal of the International Measurement Confederation, 2017, 106, 179-189.	5.0	2
132	Full Covariance Fitting DoA Estimation Using Partial Relaxation Framework. , 2019, , .		2
133	Optimal IV-SSF approach to array signal processing in colored noise fields. , 0, , .		1
134	Reduced-rank linear regression. , 0, , .		1
135	Multiple transient estimation using bootstrap and subspace methods. , 0, , .		1
136	Analysis of spectral-based localization of spatially distributed sources. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 103-108.	0.4	1
137	Broadband ML estimation under model order uncertainty. , 2009, , .		1
138	Reconstruction of metal protrusion on flat ground plane. IET Microwaves, Antennas and Propagation, 2010, 4, 1746.	1.4	1
139	A robust ℓ_1 penalized DOA estimator. , 2012, , .		1
140	Wideband waveform design for clutter suppression. , 2014, , .		1
141	Wideband Waveform and Receiver Filter Bank Design for Clutter Suppression. IEEE Journal on Selected Topics in Signal Processing, 2015, 9, 1366-1376.	10.8	1
142	Simultaneous information and power transfer with transmitters with hardware impairments. , 2016, , .		1
143	Transmission strategies for remote estimation under energy harvesting constraints. , 2016, , .		1
144	Cram�er-rao Bound for DOA Estimators under the Partial Relaxation Framework. , 2019, , .		1

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145	Recent advances in multidimensional sensor array signal processing. , 1989, , .		0
146	On Cramer Rao bounds and optimal beamspace transformation in radar array processing. , 0, , .		0
147	Using the bootstrap for robust detection in array signal processing. , 0, , .		0
148	Optimal subspace techniques for DOA estimation. , 2001, , 261-278.		0
149	3G transmit diversity and inter-cell interference suppression using multiple antenna terminals. , 0, , .		0
150	LMMSE channel prediction based on sinusoidal modeling. , 0, , .		0
151	Hammerstein System Linearization with Application to Nonlinear Acoustic Echo Cancellation. , 2006, , .		0
152	Analysis of 3-D shape estimation using bistatic multi-channel radar systems. , 2008, , .		0
153	RELAX-based autofocus algorithm for high-resolution strip-map SAR. , 2009, , .		0
154	An efficient signaling for multi-mode transmission in multi-user MIMO. , 2010, , .		0
155	Interpolation based on stationary and adaptive AR(1) modeling. , 2011, , .		0
156	Array Signal Processing: Overview of the Included Chapters. Academic Press Library in Signal Processing, 2014, 3, 457-462.	0.8	0
157	Basis pursuit over continuum applied to range-Doppler estimation problem. , 2014, , .		0
158	MIMO linear precoder design with non-ideal transmitters. , 2015, , .		0
159	Wideband waveform design for robust target detection. , 2015, , .		0
160	Direction-of-Arrival Estimation in Mobile Communication Environments. Electrical Engineering and Applied Signal Processing Series, 2001, , .	1.2	0