Mats Viberg

List of Publications by Year
in descending order

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	CramÃ©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
2	Reconstruction of Clipped Signals in Quantized Uplink Massive MIMO Systems. IEEE Transactions on Communications, 2020, 68, 2891-2905.	7.8	5
3	CramÃ‰r-rao Bound for DOA Estimators under the Partial Relaxation Framework. , 2019, , .		1
4	Full Covariance Fitting DoA Estimation Using Partial Relaxation Framework. , 2019, , .		2
5	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
6	An Improved Doa Estimator Based on Partial Relaxation Approach. , 2018, , .		11
7	Partial Relaxation Approach: An Eigenvalue-Based DOA Estimator Framework. IEEE Transactions on Signal Processing, 2018, 66, 6190-6203.	5.3	35
8	Remote Estimation of Correlated Sources Under Energy Harvesting Constraints. IEEE Transactions on Wireless Communications, 2018, 17, 5300-5313.	9.2	5
9	Massive MIMO Systems With IQ Imbalance: Channel Estimation and Sum Rate Limits. IEEE Transactions on Communications, 2017, 65, 2382-2396.	7.8	37
10	Hybrid beamforming in uplink massive MIMO systems in the presence of blockers. , 2017, , .		2
11	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
12	Downlink performance of regularized ZF in massive MIMO systems subject to IQ imbalance. , 2017, , .		4
13	Simultaneous information and power transfer under a non-linear RF energy harvesting model. , 2017, , .		46
14	Transmission Strategies for Remote Estimation With an Energy Harvesting Sensor. IEEE Transactions on Wireless Communications, 2017, 16, 4390-4403.	9.2	9
15	Performance Analysis of Sparsity-Based Parameter Estimation. IEEE Transactions on Signal Processing, 2017, 65, 6478-6488.	5.3	5
16	Improved DOA estimators using partial relaxation approach. , 2017, , .		6
17	Simultaneous information and power transfer with transmitters with hardware impairments. , 2016, , .		1
18	Transmission strategies for remote estimation under energy harvesting constraints. , 2016, , .		1

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19	Performance bounds for remote estimation with an energy harvesting sensor. , 2016, , .		2
20	Array response interpolation and DOA estimation with array response decomposition. Signal Processing, 2016, 125, 97-109.	3.7	5
21	MIMO linear precoder design with non-ideal transmitters. , 2015, , .		0
22	A numerical implementation of gridless compressed sensing. , 2015, , .		7
23	Array calibration using array response interpolation and parametric modeling. , 2015, , .		3
24	Wideband waveform design for robust target detection. , 2015, , .		0
25	Maximum Aperture Power Transmission in Lossy Homogeneous Matters. IEEE Antennas and Wireless Propagation Letters, 2015, 14, 175-178.	4.0	3
26	Wireless information and power transfer in MIMO channels under Rician fading. , 2015, , .		2
27	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
28	Gridless compressive sensing. , 2014, , .		3
29	Array Signal Processing: Overview of the Included Chapters. Academic Press Library in Signal Processing, 2014, 3, 457-462.	0.8	0
30	Array Processing in the Face of Nonidealities. Academic Press Library in Signal Processing, 2014, 3, 819-857.	0.8	4
31	Optimal aperture distribution for near-field detection of foreign objects in lossy media. , 2014, , .		9
32	Wideband waveform design for clutter suppression. , 2014, , .		1
33	Basis pursuit over continuum applied to range-Doppler estimation problem. , 2014, , .		0
34	Introduction to Array Processing. Academic Press Library in Signal Processing, 2014, 3, 463-502.	0.8	13
35	DOA Estimation Methods and Algorithms. Academic Press Library in Signal Processing, 2014, 3, 599-650.	0.8	37
36	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

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37	Robust transceiver design for wideband MIMO radar utilizing a subarray antenna structure. Signal Processing, 2013, 93, 3541-3552.	3.7	2
38	A novel method of DOA tracking by penalized least squares. , 2013, , .		3
39	Sequential Bayesian Sparse Signal Reconstruction Using Array Data. IEEE Transactions on Signal Processing, 2013, 61, 6344-6354.	5.3	39
40	A robust ℓ<inf>1</inf> penalized DOA estimator. , 2012, , .		1
41	Impact of Base Station Antenna Tilt on the Performance of Network MIMO Systems. , 2012, , .		11
42	Regularized optimization for joint super-resolution and high dynamic range image reconstruction in a perceptually uniform domain. , 2012, , .		10
43	Efficient Channel Estimation Techniques for Amplify and Forward Relaying Systems. IEEE Transactions on Communications, 2012, 60, 3150-3155.	7.8	40
44	Bayesian Approach to Channel Estimation for AF MIMO Relaying Systems. IEEE Journal on Selected Areas in Communications, 2012, 30, 1440-1451.	14.0	23
45	Fast Candidate Points Selection in the LASSO Path. IEEE Signal Processing Letters, 2012, 19, 79-82.	3.6	16
46	Channel Tracking for AF MIMO Relaying Systems. , 2012, , .		6
47	Throughput Optimization for MISO Interference Channels via Coordinated User-Specific Tilting. IEEE Communications Letters, 2012, 16, 1248-1251.	4.1	35
48	Transmit and receive filter optimization for wideband MIMO radar. , 2011, , .		2
49	Fast LASSO based DOA tracking. , 2011, , .		16
50	Low PAPR waveform synthesis with application to wideband MIMO radar. , 2011, , .		2
51	Bayesian Channel Estimation Techniques for AF MIMO Relaying Systems. , 2011, , .		5
52	A new method to compute optimal periodic sampling patterns. , 2011, , .		4
53	On the resolution of The LASSO-based DOA estimation method. , 2011, , .		7
54	A NLLS based sub-nyquist rate spectrum sensing for wideband cognitive radio. , 2011, , .		19

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55	A wideband spectrum sensing method for cognitive radio using sub-Nyquist sampling. , 2011, , .		29
56	Multimode Transmission in Network MIMO Downlink with Incomplete CSI. Eurasip Journal on Advances in Signal Processing, 2011, 2011, .	1.7	2
57	Sensor Array and Multichannel Signal Processing [In the Spotlight]. IEEE Signal Processing Magazine, 2011, 28, 157-158.	5.6	5
58	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
59	Eigenbeam transmission over line-of-sight MIMO channels for fixed microwave links. , 2011, , .		2
60	Coordinated user scheduling in the multi-cell MIMO downlink. , 2011, , .		7
61	Interpolation based on stationary and adaptive AR(1) modeling. , 2011, , .		0
62	Maximum a posteriori based regularization parameter selection. , 2011, , .		9
63	Reconstruction of metal protrusion on flat ground plane. IET Microwaves, Antennas and Propagation, 2010, 4, 1746.	1.4	1
64	Broadband ML estimation under model order uncertainty. Signal Processing, 2010, 90, 1350-1356.	3.7	4
65	Parametrization of acoustic images for the detection of human presence by mobile platforms. , 2010, , .		4
66	An efficient signaling for multi-mode transmission in multi-user MIMO. , 2010, , .		0
67	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
68	Self-interference suppression in full-duplex MIMO relays. , 2010, , .		87
69	Coordinated single-cell vs multi-cell transmission with limited-capacity backhaul. , 2010, , .		12
70	Calibration in Array Processing. , 2009, , 93-124.		23
71	Array interpolation based on Local Polynomial Approximation with application to DOA estimation using weighted MUSIC. , 2009, , .		7
72	Broadband ML estimation under model order uncertainty. , 2009, , .		1

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73	CLEAN technique in strip-map SAR for high-quality imaging. , 2009, , .		9
74	RELAX-based autofocus algorithm for high-resolution strip-map SAR. , 2009, , .		0
75	Long-Range Channel Prediction Based on Nonstationary Parametric Modeling. IEEE Transactions on Signal Processing, 2009, 57, 622-634.	5.3	13
76	Performance analysis of relay channel estimation. , 2009, , .		17
77	On the Resolution Probability of MUSIC in Presence of Modeling Errors. IEEE Transactions on Signal Processing, 2008, 56, 1945-1953.	5.3	33
78	Least-Squares based channel estimation for MIMO relays. , 2008, , .		57
79	Analysis of 3-D shape estimation using bistatic multi-channel radar systems. , 2008, , .		0
80	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
81	Adaptive channel prediction based on polynomial phase signals. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	3
82	A new method based on dynamic programming for boundary detection in ultrasound image sequences. , 2008, 2008, 3072-4.		5
83	Adaptive beamforming using calibration vectors with unknown gain and phase. , 2007, , .		3
84	Two-Step Esprit with Compensation for Modelling Errors using a Sparse Calibration Grid. , 2007, , .		2
85	Models and Predictions of Scattered Radio Waves on Rough Surfaces. , 2007, , .		4
86	Optimized Beamforming Calibration in the Presence of Array Imperfections. , 2007, , .		5
87	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
88	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
89	New Approaches for Channel Prediction Based on Sinusoidal Modeling. Eurasip Journal on Advances in Signal Processing, 2006, 2007, 1.	1.7	22
90	Hammerstein System Linearization with Application to Nonlinear Acoustic Echo Cancellation. , 2006, , .		0

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91	Region-Based Statistical Background Modeling for Foreground Object Segmentation. , 2006, , .		3
92	Calibrating an Array with Scan Dependent Errors Using a Sparse Grid. , 2006, , .		17
93	Two new approaches to channel prediction based on sinusoidal modelling. , 2005, , .		4
94	Subspace based approaches for Wiener system identification. IEEE Transactions on Automatic Control, 2005, 50, 1629-1634.	5.7	35
95	Asymptotic Properties of Nonlinear Weighted Least Squares in Radar Array Processing. IEEE Transactions on Signal Processing, 2004, 52, 3083-3095.	5.3	5
96	A first-order statistical method for channel estimation. IEEE Signal Processing Letters, 2003, 10, 57-60.	3.6	166
97	Estimation of resonant frequencies and quality factors from time domain computations. Journal of Computational Physics, 2003, 192, 523-545.	3.8	11
98	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
99	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
100	Subspace-based state-space system identification. Circuits, Systems, and Signal Processing, 2002, 21, 23-37.	2.0	17
101	Optimal subspace techniques for DOA estimation. , 2001, , 261-278.		0
102	Superimposed periodic pilots for blind channel estimation. , 2001, , .		18
103	Direction-of-Arrival Estimation in Mobile Communication Environments. Electrical Engineering and Applied Signal Processing Series, 2001, , .	1.2	0
104	Adaptive data reduction for signals observed in spatially colored noise. Signal Processing, 2000, 80, 1823-1831.	3.7	7
105	Maximum likelihood array processing in spatially correlated noise fields using parameterized signals. IEEE Transactions on Signal Processing, 1997, 45, 996-1004.	5.3	101
106	Analysis of state space system identification methods based on instrumental variables and subspace fitting. Automatica, 1997, 33, 1603-1616.	5.0	106
107	Maximum likelihood array processing for stochastic coherent sources. IEEE Transactions on Signal Processing, 1996, 44, 96-105.	5.3	81
108	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

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109	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
110	Maximum likelihood parameter and rank estimation in reduced-rank multivariate linear regressions. IEEE Transactions on Signal Processing, 1996, 44, 3069-3078.	5.3	93
111	Two decades of array signal processing research: the parametric approach. IEEE Signal Processing Magazine, 1996, 13, 67-94.	5.6	3,548
112	Subspace-based methods for the identification of linear time-invariant systems. Automatica, 1995, 31, 1835-1851.	5.0	517
113	Weighted LS and TLS approaches yield asymptotically equivalent results. Signal Processing, 1995, 45, 255-259.	3.7	9
114	Performance analysis of direction finding with large arrays and finite data. IEEE Transactions on Signal Processing, 1995, 43, 469-477.	5.3	58
115	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
116	Computationally efficient angle estimation for signals with known waveforms. IEEE Transactions on Signal Processing, 1995, 43, 2154-2163.	5.3	163
117	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
118	A Bayesian approach to auto-calibration for parametric array signal processing. IEEE Transactions on Signal Processing, 1994, 42, 3495-3507.	5.3	142
119	Blind estimation of multiple co-channel digital signals using an antenna array. IEEE Signal Processing Letters, 1994, 1, 29-31.	3.6	168
120	Sensitivity of parametric direction finding to colored noise fields and undermodeling. Signal Processing, 1993, 34, 207-222.	3.7	38
121	Subspace fitting with diversely polarized antenna arrays. IEEE Transactions on Antennas and Propagation, 1993, 41, 1687-1694.	5.1	60
122	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
123	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
124	Performance analysis of the total least squares ESPRIT algorithm. IEEE Transactions on Signal Processing, 1991, 39, 1122-1135.	5.3	232
125	Detection and estimation in sensor arrays using weighted subspace fitting. IEEE Transactions on Signal Processing, 1991, 39, 2436-2449.	5.3	408
126	An adaptive array for mobile communication systems. IEEE Transactions on Vehicular Technology, 1991, 40, 230-236.	6.3	233

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127	Sensor array processing based on subspace fitting. IEEE Transactions on Signal Processing, 1991, 39, 1110-1121.	5.3	568
128	Subspace fitting concepts in sensor array processing. Signal Processing, 1990, 19, 345.	3.7	24
129	Asymptotic Analysis Of The Total Least Squares ESPRIT Algorithm'. Proceedings of SPIE, 1989, , .	0.8	4
130	Stochastic maximum likelihood estimation in sensor arrays by weighted subspace fitting. , 1989, , .		13
131	Sensor array processing using gated signals. IEEE Transactions on Acoustics, Speech, and Signal Processing, 1989, 37, 447-450.	2.0	16
132	Direction-of-arrival estimation and detection using weighted subspace fitting. , 1989, , .		13
133	Recent advances in multidimensional sensor array signal processing. , 1989, , .		0
134	ESPRIT And Uniform Linear Arrays. Proceedings of SPIE, 1989, , .	0.8	4
135	Optimal array signal processing in the presence of coherent wavefronts. , 0, , .		2
136	Analysis of subspace fitting based methods for sensor array processing. , 0, , .		37
137	Asymptotic robustness of sensor array processing methods. , 0, , .		10
138	Analysis of algorithms for sensor arrays with invariance structure. , 0, , .		6
139	A statistical perspective on state-space modeling using subspace methods. , 0, , .		25
140	Local modeling and robust estimation for high-resolution direction finding. , 0, , .		7
141	A Bayesian approach to direction finding with parametric array uncertainty. , 0, , .		4
142	Reception of multiple co-channel digital signals using antenna arrays with applications to PCS. , 0, , .		10
143	Optimal localization of partially known signals in unknown noise fields. , 0, , .		5
144	Optimal IV-SSF approach to array signal processing in colored noise fields. , 0, , .		1

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145	Instrumental variable subspace tracking with applications to sensor array processing and frequency estimation. , 0, , .		6
146	On Cramer Rao bounds and optimal beamspace transformation in radar array processing. , 0, , .		0
147	Reduced-rank linear regression. , 0, , .		1
148	Two decades of statistical array processing. , 0, , .		4
149	Performance of decoupled direction finding based on blind signal separation. , 0, , .		7
150	Separable non-linear least-squares minimization-possible improvements for neural net fitting. , 0, , .		41
151	A computationally efficient method for joint direction finding and frequency estimation in colored noise. , 0, , .		25
152	Direction finding with a dually polarized antenna array using path-wise constraints with application to real data. , 0, , .		3
153	Adaptive neural nets filter using a recursive Levenberg-Marquardt search direction. , 0, , .		30
154	Multiple transient estimation using bootstrap and subspace methods. , 0, , .		1
155	Using the bootstrap for robust detection in array signal processing. , 0, , .		0
156	Element position considerations for robust direction finding using sparse arrays. , 0, , .		18
157	3G transmit diversity and inter-cell interference suppression using multiple antenna terminals. , 0, , .		0
158	LMMSE channel prediction based on sinusoidal modeling. , 0, , .		0
159	Data-Adaptive Array Interpolation for DOA Estimation in Correlated Signal Environments. , 0, , .		9
160	3D Face Recognition Using Affine Integral Invariants. , 0, , .		5