Robert W Heath Jr

List of Publications by Year
in descending order

733	57,032	1883	1745
papers	citations	102 h-index	212 g-index

753	753	753	16798
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Five disruptive technology directions for 5G. IEEE Communications Magazine, 2014, 52, 74-80.	4.9	3,763
2	Spatially Sparse Precoding in Millimeter Wave MIMO Systems. IEEE Transactions on Wireless Communications, 2014, 13, 1499-1513.	6.1	2,582
3	An Overview of Signal Processing Techniques for Millimeter Wave MIMO Systems. IEEE Journal on Selected Topics in Signal Processing, 2016, 10, 436-453.	7.3	1,949
4	Channel Estimation and Hybrid Precoding for Millimeter Wave Cellular Systems. IEEE Journal on Selected Topics in Signal Processing, 2014, 8, 831-846.	7.3	1,897
5	MIMO Precoding and Combining Solutions for Millimeter-Wave Systems. IEEE Communications Magazine, 2014, 52, 122-131.	4.9	1,871
6	Grassmannian beamforming for multiple-input multiple-output wireless systems. IEEE Transactions on Information Theory, 2003, 49, 2735-2747.	1.5	1,260
7	An overview of limited feedback in wireless communication systems. IEEE Journal on Selected Areas in Communications, 2008, 26, 1341-1365.	9.7	1,154
8	Coverage and Rate Analysis for Millimeter-Wave Cellular Networks. IEEE Transactions on Wireless Communications, 2015, 14, 1100-1114.	6.1	1,048
9	Limited Feedback Hybrid Precoding for Multi-User Millimeter Wave Systems. IEEE Transactions on Wireless Communications, 2015, 14, 6481-6494.	6.1	912
10	Shifting the MIMO Paradigm. IEEE Signal Processing Magazine, 2007, 24, 36-46.	4.6	886
11	Energy-Efficient Hybrid Analog and Digital Precoding for MmWave MIMO Systems With Large Antenna Arrays. IEEE Journal on Selected Areas in Communications, 2016, 34, 998-1009.	9.7	801
12	Grassmannian frames with applications to coding and communication. Applied and Computational Harmonic Analysis, 2003, 14, 257-275.	1.1	714
13	Hybrid MIMO Architectures for Millimeter Wave Communications: Phase Shifters or Switches?. IEEE Access, 2016, 4, 247-267.	2.6	670
14	Limited Feedback Unitary Precoding for Spatial Multiplexing Systems. IEEE Transactions on Information Theory, 2005, 51, 2967-2976.	1.5	655
15	Millimeter-Wave Vehicular Communication to Support Massive Automotive Sensing. , 2016, 54, 160-167.		555
16	Antenna selection for spatial multiplexing systems with linear receivers. IEEE Communications Letters, 2001, 5, 142-144.	2.5	520
17	Analysis of Blockage Effects on Urban Cellular Networks. IEEE Transactions on Wireless Communications, 2014, 13, 5070-5083.	6.1	506
18	Mimo for millimeter-wave wireless communications: beamforming, spatial multiplexing, or both?. , 2014, 52, 110-121.		496

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19	Modeling and Analyzing Millimeter Wave Cellular Systems. IEEE Transactions on Communications, 2016, , 1-1.	4.9	486
20	60 GHz wireless communications: Emerging requirements and design recommendations. IEEE Vehicular Technology Magazine, 2007, 2, 41-50.	2.8	449
21	What is the value of limited feedback for MIMO channels?. , 2004, 42, 54-59.		448
22	Networked MIMO with clustered linear precoding. IEEE Transactions on Wireless Communications, 2009, 8, 1910-1921.	6.1	445
23	Low complexity user selection algorithms for multiuser MIMO systems with block diagonalization. IEEE Transactions on Signal Processing, 2006, 54, 3658-3663.	3.2	441
24	Modeling Heterogeneous Network Interference Using Poisson Point Processes. IEEE Transactions on Signal Processing, 2013, 61, 4114-4126.	3.2	433
25	Frequency Selective Hybrid Precoding for Limited Feedback Millimeter Wave Systems. IEEE Transactions on Communications, 2016, 64, 1801-1818.	4.9	419
26	IEEE 802.11ad-Based Radar: An Approach to Joint Vehicular Communication-Radar System. IEEE Transactions on Vehicular Technology, 2018, 67, 3012-3027.	3.9	395
27	Interference alignment via alternating minimization. , 2009, , .		363
28	Designing structured tight frames via an alternating projection method. IEEE Transactions on Information Theory, 2005, 51, 188-209.	1.5	362
29	Transmit selection in spatial multiplexing systems. IEEE Communications Letters, 2002, 6, 491-493.	2.5	358
30	Switching Between Diversity and Multiplexing in MIMO Systems. IEEE Transactions on Communications, 2005, 53, 962-968.	4.9	354
31	Power Control for D2D Underlaid Cellular Networks: Modeling, Algorithms, and Analysis. IEEE Journal on Selected Areas in Communications, 2015, 33, 1-13.	9.7	344
32	Adaptive modulation and MIMO coding for broadband wireless data networks. , 2002, 40, 108-115.		340
33	Near Maximum-Likelihood Detector and Channel Estimator for Uplink Multiuser Massive MIMO Systems With One-Bit ADCs. IEEE Transactions on Communications, 2016, 64, 2005-2018.	4.9	340
34	MIMO Relaying With Linear Processing for Multiuser Transmission in Fixed Relay Networks. IEEE Transactions on Signal Processing, 2008, 56, 727-738.	3.2	320
35	Dynamic Subarrays for Hybrid Precoding in Wideband mmWave MIMO Systems. IEEE Transactions on Wireless Communications, 2017, 16, 2907-2920.	6.1	320
36	Capacity Analysis of One-Bit Quantized MIMO Systems With Transmitter Channel State Information. IEEE Transactions on Signal Processing, 2015, 63, 5498-5512.	3.2	319

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37	An Overview of Signal Processing Techniques for Joint Communication and Radar Sensing. IEEE Journal on Selected Topics in Signal Processing, 2021, 15, 1295-1315.	7.3	309
38	Overcoming interference in spatial multiplexing MIMO cellular networks. IEEE Wireless Communications, 2007, 14, 95-104.	6.6	302
39	Equal gain transmission in multiple-input multiple-output wireless systems. IEEE Transactions on Communications, 2003, 51, 1102-1110.	4.9	298
40	Channel Estimation for Hybrid Architecture-Based Wideband Millimeter Wave Systems. IEEE Journal on Selected Areas in Communications, 2017, 35, 1996-2009.	9.7	291
41	Cooperative Algorithms for MIMO Interference Channels. IEEE Transactions on Vehicular Technology, 2011, 60, 206-218.	3.9	285
42	Effects of channel aging in massive MIMO systems. Journal of Communications and Networks, 2013, 15, 338-351.	1.8	285
43	Coverage and capacity of millimeter-wave cellular networks. , 2014, 52, 70-77.		284
44	Linear dispersion codes for MIMO systems based on frame theory. IEEE Transactions on Signal Processing, 2002, 50, 2429-2441.	3.2	277
45	Uplink Performance of Wideband Massive MIMO With One-Bit ADCs. IEEE Transactions on Wireless Communications, 2017, 16, 87-100.	6.1	277
46	The future of WiMAX: Multihop relaying with IEEE 802.16j. , 2009, 47, 104-111.		271
47	Multiuser MIMO in Distributed Antenna Systems With Out-of-Cell Interference. IEEE Transactions on Signal Processing, 2011, 59, 4885-4899.	3.2	266
48	Fundamental Limits of Cooperation. IEEE Transactions on Information Theory, 2013, 59, 5213-5226.	1.5	259
49	Hybrid precoding for millimeter wave cellular systems with partial channel knowledge. , 2013, , .		244
50	Limited feedback unitary precoding for orthogonal space-time block codes. IEEE Transactions on Signal Processing, 2005, 53, 64-73.	3.2	242
51	Channel Estimation in Broadband Millimeter Wave MIMO Systems With Few-Bit ADCs. IEEE Transactions on Signal Processing, 2018, 66, 1141-1154.	3.2	235
52	Blind Channel Estimation for MIMO-OFDM Systems. IEEE Transactions on Vehicular Technology, 2007, 56, 670-685.	3.9	226
53	Convergence of Iterative Waterfilling Algorithm for Gaussian Interference Channels. IEEE Journal on Selected Areas in Communications, 2007, 25, 1091-1100.	9.7	222
54	Antenna Subset Modulation for Secure Millimeter-Wave Wireless Communication. IEEE Transactions on Communications, 2013, 61, 3231-3245.	4.9	222

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55	Design and Evaluation of a Reconfigurable Antenna Array for MIMO Systems. IEEE Transactions on Antennas and Propagation, 2008, 56, 869-881.	3.1	219
56	Relay Architectures for 3GPP LTE-Advanced. Eurasip Journal on Wireless Communications and Networking, 2009, 2009, .	1.5	219
57	On the existence of equiangular tight frames. Linear Algebra and Its Applications, 2007, 426, 619-635.	0.4	216
58	Performance of Orthogonal Beamforming for SDMA With Limited Feedback. IEEE Transactions on Vehicular Technology, 2009, 58, 152-164.	3.9	214
59	Simplified Spatial Correlation Models for Clustered MIMO Channels With Different Array Configurations. IEEE Transactions on Vehicular Technology, 2007, 56, 1924-1934.	3.9	213
60	Multimode antenna selection for spatial multiplexing systems with linear receivers. IEEE Transactions on Signal Processing, 2005, 53, 3042-3056.	3.2	207
61	Channel Estimation for Orthogonal Time Frequency Space (OTFS) Massive MIMO. IEEE Transactions on Signal Processing, 2019, 67, 4204-4217.	3.2	198
62	Exploiting input cyclostationarity for blind channel identification in OFDM systems. IEEE Transactions on Signal Processing, 1999, 47, 848-856.	3.2	197
63	MIMO Interference Alignment Over Correlated Channels With Imperfect CSI. IEEE Transactions on Signal Processing, 2011, 59, 2783-2794.	3.2	197
64	Channel estimation in millimeter wave MIMO systems with one-bit quantization. , 2014, , .		197
65	Compressed sensing based multi-user millimeter wave systems: How many measurements are needed?. , 2015, , .		189
66	Low complexity precoding for large millimeter wave MIMO systems. , 2012, , .		187
67	Frequency-Domain Compressive Channel Estimation for Frequency-Selective Hybrid Millimeter Wave MIMO Systems. IEEE Transactions on Wireless Communications, 2018, 17, 2946-2960.	6.1	186
68	Block diagonalization for multi-user MIMO with other-cell interference. IEEE Transactions on Wireless Communications, 2008, 7, 2671-2681.	6.1	183
69	Beam tracking for mobile millimeter wave communication systems. , 2016, , .		182
70	60 GHz Wireless: Up Close and Personal. IEEE Microwave Magazine, 2010, 11, 44-50.	0.7	181
71	Hybrid Architectures With Few-Bit ADC Receivers: Achievable Rates and Energy-Rate Tradeoffs. IEEE Transactions on Wireless Communications, 2017, 16, 2274-2287.	6.1	181
72	Multiuser diversity for MIMO wireless systems with linear receivers. , 2001, , .		179

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73	The Impact of Beamwidth on Temporal Channel Variation in Vehicular Channels and Its Implications. IEEE Transactions on Vehicular Technology, 2017, 66, 5014-5029.	3.9	173
74	Is the PHY layer dead?. , 2011, 49, 159-165.		171
75	Adaptive Limited Feedback for Sum-Rate Maximizing Beamforming in Cooperative Multicell Systems. IEEE Transactions on Signal Processing, 2011, 59, 800-811.	3.2	169
76	Millimeter Wave Beam-Selection Using Out-of-Band Spatial Information. IEEE Transactions on Wireless Communications, 2018, 17, 1038-1052.	6.1	169
77	A current perspective on distributed antenna systems for the downlink of cellular systems. , 2013, 51, 161-167.		168
78	Rethinking information theory for mobile ad hoc networks. , 2008, 46, 94-101.		167
79	Blind channel identification and equalization in OFDM-based multiantenna systems. IEEE Transactions on Signal Processing, 2002, 50, 96-109.	3.2	166
80	Low Complexity Hybrid Precoding Strategies for Millimeter Wave Communication Systems. IEEE Transactions on Wireless Communications, 2016, 15, 8380-8393.	6.1	162
81	Performance Analysis of Outdoor mmWave Ad Hoc Networks. IEEE Transactions on Signal Processing, 2016, 64, 4065-4079.	3.2	162
82	Interpolation based transmit beamforming for MIMO-OFDM with limited feedback. IEEE Transactions on Signal Processing, 2005, 53, 4125-4135.	3.2	160
83	On the Capacity and Diversity-Multiplexing Tradeoff of the Two-Way Relay Channel. IEEE Transactions on Information Theory, 2011, 57, 4219-4234.	1.5	160
84	Coordinated beamforming with limited feedback in the MIMO broadcast channel. IEEE Journal on Selected Areas in Communications, 2008, 26, 1505-1515.	9.7	158
85	Channel estimation and hybrid combining for mmWave: Phase shifters or switches?. , 2015, , .		156
86	Millimeter Wave Vehicular Communications: A Survey. Foundations and Trends in Networking, 2016, 10, 1-113.	10.2	154
87	Where, When, and How mmWave is Used in 5G and Beyond. IEICE Transactions on Electronics, 2017, E100.C, 790-808.	0.3	154
88	The practical challenges of interference alignment. IEEE Wireless Communications, 2013, 20, 35-42.	6.6	152
89	Multimode precoding for MIMO wireless systems. IEEE Transactions on Signal Processing, 2005, 53, 3674-3687.	3.2	151
90	Limited Feedback Diversity Techniques for Correlated Channels. IEEE Transactions on Vehicular Technology, 2006, 55, 718-722.	3.9	151

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91	Interference Alignment with Analog Channel State Feedback. IEEE Transactions on Wireless Communications, 2012, 11, 626-636.	6.1	149
92	Device-to-Device Millimeter Wave Communications: Interference, Coverage, Rate, and Finite Topologies. IEEE Transactions on Wireless Communications, 2016, 15, 6175-6188.	6.1	148
93	Radar aided beam alignment in MmWave V2I communications supporting antenna diversity. , 2016, , .		145
94	5G MIMO Data for Machine Learning: Application to Beam-Selection Using Deep Learning. , 2018, , .		144
95	Multibeam for Joint Communication and Radar Sensing Using Steerable Analog Antenna Arrays. IEEE Transactions on Vehicular Technology, 2019, 68, 671-685.	3.9	143
96	Nonregenerative MIMO Relaying With Optimal Transmit Antenna Selection. IEEE Signal Processing Letters, 2008, 15, 421-424.	2.1	139
97	Opportunistic feedback for downlink multiuser diversity. IEEE Communications Letters, 2005, 9, 948-950.	2.5	134
98	A cross-layer approach to energy efficiency for adaptive MIMO systems exploiting spare capacity. IEEE Transactions on Wireless Communications, 2009, 8, 4264-4275.	6.1	134
99	Inverse Multipath Fingerprinting for Millimeter Wave V2I Beam Alignment. IEEE Transactions on Vehicular Technology, 2018, 67, 4042-4058.	3.9	134
100	Space Division Multiple Access With a Sum Feedback Rate Constraint. IEEE Transactions on Signal Processing, 2007, 55, 3879-3891.	3.2	133
101	Spatial Interference Cancellation for Multiantenna Mobile Ad Hoc Networks. IEEE Transactions on Information Theory, 2012, 58, 1660-1676.	1.5	133
102	Secure Communications in Millimeter Wave Ad Hoc Networks. IEEE Transactions on Wireless Communications, 2017, 16, 3205-3217.	6.1	133
103	Hybrid MMSE Precoding and Combining Designs for mmWave Multiuser Systems. IEEE Access, 2017, 5, 19167-19181.	2.6	130
104	Constructing Packings in Grassmannian Manifolds via Alternating Projection. Experimental Mathematics, 2008, 17, 9-35.	0.5	125
105	Maximum Sum-Rate Interference Alignment Algorithms for MIMO Channels. , 2010, , .		125
106	Millimeter-wave gigabit broadband evolution toward 5G: fixed access and backhaul. , 2016, 54, 138-144.		125
107	The capacity optimality of beam steering in large millimeter wave MIMO systems. , 2012, , .		122
108	Channel Estimation and Hybrid Precoding for Frequency Selective Multiuser mmWave MIMO Systems. IEEE Journal on Selected Topics in Signal Processing, 2018, 12, 353-367.	7.3	122

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109	Transmit Selection Diversity for Unitary Precoded Multiuser Spatial Multiplexing Systems With Linear Receivers. IEEE Transactions on Signal Processing, 2007, 55, 1159-1171.	3.2	119
110	Interference Coordination: Random Clustering and Adaptive Limited Feedback. IEEE Transactions on Signal Processing, 2013, 61, 1822-1834.	3.2	116
111	Adaptation in Convolutionally Coded MIMO-OFDM Wireless Systems Through Supervised Learning and SNR Ordering. IEEE Transactions on Vehicular Technology, 2010, 59, 114-126.	3.9	114
112	Rate Bounds on SSIM Index of Quantized Images. IEEE Transactions on Image Processing, 2008, 17, 1624-1639.	6.0	113
113	Millimeter Wave Energy Harvesting. IEEE Transactions on Wireless Communications, 2016, 15, 6048-6062.	6.1	113
114	Framework for a Perceptive Mobile Network Using Joint Communication and Radar Sensing. IEEE Transactions on Aerospace and Electronic Systems, 2020, 56, 1926-1941.	2.6	113
115	Multi-Mode Transmission for the MIMO Broadcast Channel with Imperfect Channel State Information. IEEE Transactions on Communications, 2011, 59, 803-814.	4.9	112
116	Benefit of pattern diversity via two-element array of circular patch antennas in indoor clustered MIMO channels. IEEE Transactions on Communications, 2006, 54, 943-954.	4.9	109
117	On the Overhead of Interference Alignment: Training, Feedback, and Cooperation. IEEE Transactions on Wireless Communications, 2012, 11, 4192-4203.	6.1	109
118	Spectral Efficiency of Dynamic Coordinated Beamforming: A Stochastic Geometry Approach. IEEE Transactions on Wireless Communications, 2015, 14, 230-241.	6.1	109
119	Opportunistic Space-Division Multiple Access With Beam Selection. IEEE Transactions on Communications, 2007, 55, 2371-2380.	4.9	107
120	Adaptive MIMO Transmission for Exploiting the Capacity of Spatially Correlated Channels. IEEE Transactions on Vehicular Technology, 2007, 56, 619-630.	3.9	106
121	Exploiting Spatial Channel Covariance for Hybrid Precoding in Massive MIMO Systems. IEEE Transactions on Signal Processing, 2017, 65, 3818-3832.	3.2	106
122	Initial Beam Association in Millimeter Wave Cellular Systems: Analysis and Design Insights. IEEE Transactions on Wireless Communications, 2017, 16, 2807-2821.	6.1	105
123	Adaptive Virtual Waveform Design for Millimeter-Wave Joint Communicationâ€“Radar. IEEE Transactions on Signal Processing, 2020, 68, 715-730.	3.2	105
124	The Feasibility of Interference Alignment Over Measured MIMO-OFDM Channels. IEEE Transactions on Vehicular Technology, 2010, 59, 4309-4321.	3.9	103
125	Sum Capacity of Multiuser MIMO Broadcast Channels with Block Diagonalization. IEEE Transactions on Wireless Communications, 2007, 6, 2040-2045.	6.1	102
126	Performance analysis of maximum ratio combining with imperfect channel estimation in the presence of cochannel interferences. IEEE Transactions on Wireless Communications, 2009, 8, 1080-1085.	6.1	101

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127	Limited Feedback Beamforming Over Temporally-Correlated Channels. IEEE Transactions on Signal Processing, 2009, 57, 1959-1975.	3.2	100
128	Adaptive MIMO transmission techniques for broadband wireless communication systems [Topics in Wireless Communications]. IEEE Communications Magazine, 2010, 48, 112-118.	4.9	99
129	Coverage and capacity in mmWave cellular systems. , 2012, , .		98
130	Auxiliary Beam Pair Enabled AoD and AoA Estimation in Closed-Loop Large-Scale Millimeter-Wave MIMO Systems. IEEE Transactions on Wireless Communications, 2017, 16, 4770-4785.	6.1	98
131	Non-Stationarities in Extra-Large-Scale Massive MIMO. IEEE Wireless Communications, 2020, 27, 74-80.	6.6	97
132	Adaptive Bit Partitioning for Multicell Intercell Interference Nulling With Delayed Limited Feedback. IEEE Transactions on Signal Processing, 2011, 59, 3824-3836.	3.2	96
133	Transmission Capacity of Ad-hoc Networks With Multiple Antennas Using Transmit Stream Adaptation and Interference Cancellation. IEEE Transactions on Information Theory, 2012, 58, 780-792.	1.5	96
134	Grassmannian Differential Limited Feedback for Interference Alignment. IEEE Transactions on Signal Processing, 2012, 60, 6481-6494.	3.2	95
135	High SNR capacity of millimeter wave MIMO systems with one-bit quantization. , 2014, , .		94
136	On the Feasibility of Sharing Spectrum Licenses in mmWave Cellular Systems. IEEE Transactions on Communications, 2016, 64, 3981-3995.	4.9	94
137	LIDAR Data for Deep Learning-Based mmWave Beam-Selection. IEEE Wireless Communications Letters, 2019, 8, 909-912.	3.2	94
138	Interpolation Based Unitary Precoding for Spatial Multiplexing MIMO-OFDM With Limited Feedback. IEEE Transactions on Signal Processing, 2006, 54, 4730-4740.	3.2	91
139	The Interplay Between Massive MIMO and Underlaid D2D Networking. IEEE Transactions on Wireless Communications, 2015, 14, 3337-3351.	6.1	89
140	One-Bit Sphere Decoding for Uplink Massive MIMO Systems With One-Bit ADCs. IEEE Transactions on Wireless Communications, 2018, 17, 4509-4521.	6.1	86
141	Blind identification of multichannel FIR blurs and perfect image restoration. IEEE Transactions on Image Processing, 2000, 9, 1877-1896.	6.0	85
142	Simulation of MIMO channel capacity with antenna polarization diversity. IEEE Transactions on Wireless Communications, 2005, 4, 1869-1873.	6.1	85
143	Perceptive Mobile Networks: Cellular Networks With Radio Vision via Joint Communication and Radar Sensing. IEEE Vehicular Technology Magazine, 2021, 16, 20-30.	2.8	85
144	Design of Linear Equalizers Optimized for the Structural Similarity Index. IEEE Transactions on Image Processing, 2008, 17, 857-872.	6.0	84

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145	Millimeter-Wave Communication with Out-of-Band Information. , 2017, 55, 140-146.		84
146	Block Diagonalized Vector Perturbation for Multiuser MIMO Systems. IEEE Transactions on Wireless Communications, 2008, 7, 4051-4057.	6.1	83
147	Spatial multiplexing in correlated fading via the virtual channel representation. IEEE Journal on Selected Areas in Communications, 2003, 21, 856-866.	9.7	82
148	Artificial-Noise-Aided Secure Multi-Antenna Transmission With Limited Feedback. IEEE Transactions on Wireless Communications, 2015, 14, 2742-2754.	6.1	81
149	Online Learning for Position-Aided Millimeter Wave Beam Training. IEEE Access, 2019, 7, 30507-30526.	2.6	81
150	Investigating the IEEE 802.11ad Standard for Millimeter Wave Automotive Radar. , 2015, , .		80
151	Enhancing Secrecy With Multiantenna Transmission in Millimeter Wave Vehicular Communication Systems. IEEE Transactions on Vehicular Technology, 2017, 66, 8139-8151.	3.9	80
152	The viability of distributed antennas for massive MIMO systems. , 2013, , .		79
153	Low complexity hybrid sparse precoding and combining in millimeter wave MIMO systems. , 2015, , .		79
154	Mode Switching for the Multi-Antenna Broadcast Channel Based on Delay and Channel Quantization. Eurasip Journal on Advances in Signal Processing, 2009, 2009, .	1.0	78
155	Modeling the Timeâ€"Varying Subjective Quality of HTTP Video Streams With Rate Adaptations. IEEE Transactions on Image Processing, 2014, 23, 2206-2221.	6.0	78
156	Optimization of Power Transfer Efficiency and Energy Efficiency for Wireless-Powered Systems With Massive MIMO. IEEE Transactions on Wireless Communications, 2018, 17, 7159-7172.	6.1	78
157	OFDM Power Loading Using Limited Feedback. IEEE Transactions on Vehicular Technology, 2005, 54, 1773-1780.	3.9	77
158	Opportunistic Feedback for Multiuser MIMO Systems With Linear Receivers. IEEE Transactions on Communications, 2007, 55, 1020-1032.	4.9	77
159	MmWave Vehicle-to-Infrastructure Communication: Analysis of Urban Microcellular Networks. IEEE Transactions on Vehicular Technology, 2018, 67, 7086-7100.	3.9	77
160	Channel Feedback Based on AoD-Adaptive Subspace Codebook in FDD Massive MIMO Systems. IEEE Transactions on Communications, 2018, 66, 5235-5248.	4.9	77
161	Cooperative Algorithms for MIMO Amplify-and-Forward Relay Networks. IEEE Transactions on Signal Processing, 2013, 61, 1272-1287.	3.2	74
162	Multimode precoding in millimeter wave MIMO transmitters with multiple antenna sub-arrays. , 2013, , .		74

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163	Extremely Large Aperture Massive MIMO: Low Complexity Receiver Architectures. , 2018, , .		74
164	Beam design for beam switching based millimeter wave vehicle-to-infrastructure communications. , 2016, , .		73
165	Massive MIMO Combining with Switches. IEEE Wireless Communications Letters, 2016, 5, 232-235.	3.2	73
166	Using random shape theory to model blockage in random cellular networks. , 2012, , .		72
167	Delay-Constrained Video Transmission: Quality-Driven Resource Allocation and Scheduling. IEEE Journal on Selected Topics in Signal Processing, 2015, 9, 60-75.	7.3	72
168	Channel Adaptive Quantization for Limited Feedback MIMO Beamforming Systems. IEEE Transactions on Signal Processing, 2006, 54, 4717-4729.	3.2	71
169	Performance Analysis of Quantized Beamforming MIMO Systems. IEEE Transactions on Signal Processing, 2006, 54, 4753-4766.	3.2	71
170	Performance of vector perturbation multiuser MIMO systems with limited feedback. IEEE Transactions on Communications, 2009, 57, 2633-2644.	4.9	71
171	Multimode Transmission for Multiuser MIMO Systems With Block Diagonalization. IEEE Transactions on Signal Processing, 2008, 56, 3294-3302.	3.2	70
172	Coverage analysis for millimeter wave cellular networks with blockage effects. , 2013, , .		68
173	MmWave Vehicular Beam Selection With Situational Awareness Using Machine Learning. IEEE Access, 2019, 7, 87479-87493.	2.6	67
174	Coordinated Beamforming for the Multiuser MIMO Broadcast Channel With Limited Feedforward. IEEE Transactions on Signal Processing, 2008, 56, 6044-6056.	3.2	66
175	Millimeter Wave Networked Wearables in Dense Indoor Environments. IEEE Access, 2016, 4, 1205-1221.	2.6	66
176	Basic Relationship between Channel Coherence Time and Beamwidth in Vehicular Channels. , 2015, , .		65
177	Analyzing Uplink SINR and Rate in Massive MIMO Systems Using Stochastic Geometry. IEEE Transactions on Communications, 2016, 64, 4592-4606.	4.9	65
178	MmWave Beam Prediction with Situational Awareness: A Machine Learning Approach. , 2018, , .		65
179	A New Look at Physical Layer Security, Caching, and Wireless Energy Harvesting for Heterogeneous Ultra-Dense Networks. , 2018, 56, 49-55.		65
180	On quasi-orthogonal signatures for CDMA systems. IEEE Transactions on Information Theory, 2006, 52, 1217-1226.	1.5	64

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181	Finite-Step Algorithms for Constructing Optimal CDMA Signature Sequences. IEEE Transactions on Information Theory, 2004, 50, 2916-2921.	1.5	63
182	Interference in finite-sized highly dense millimeter wave networks. , 2015, , .		63
183	Beam Switching for Millimeter Wave Communication to Support High Speed Trains. , 2015, , .		63
184	Kerdock Codes for Limited Feedback Precoded MIMO Systems. IEEE Transactions on Signal Processing, 2009, 57, 3711-3716.	3.2	62
185	Decentralized Precoding for Multicell MIMO Downlink. IEEE Transactions on Wireless Communications, 2011, 10, 1798-1809.	6.1	62
186	Compressed channel feedback for correlated massive MIMO systems. Journal of Communications and Networks, 2016, 18, 95-104.	1.8	61
187	Quantization on the Grassmann Manifold. IEEE Transactions on Signal Processing, 2007, 55, 4208-4216.	3.2	60
188	Macrodiversity in Cellular Networks With Random Blockages. IEEE Transactions on Wireless Communications, 2018, 17, 996-1010.	6.1	60
189	Dictionary-free hybrid precoders and combiners for mmWave MIMO systems. , 2015, , .		59
190	Leveraging Sensing at the Infrastructure for mmWave Communication. IEEE Communications Magazine, 2020, 58, 84-89.	4.9	59
191	Interference Aware-Coordinated Beamforming in a Multi-Cell System. IEEE Transactions on Wireless Communications, 2012, 11, 3692-3703.	6.1	58
192	Three-Dimensional Beamforming for Large-Scale FD-MIMO Systems Exploiting Statistical Channel State Information. IEEE Transactions on Vehicular Technology, 2016, 65, 8992-9005.	3.9	58
193	Necessary and sufficient conditions for full diversity order in correlated Rayleigh fading beamforming and combining systems. IEEE Transactions on Wireless Communications, 2005, 4, 20-23.	6.1	56
194	Network Coordinated Beamforming for Cell-Boundary Users: Linear and Nonlinear Approaches. IEEE Journal on Selected Topics in Signal Processing, 2009, 3, 1094-1105.	7.3	56
195	Optimal amplify and forward strategy for two-way relay channel with multiple relays. , 2009, , .		56
196	Forward Collision Vehicular Radar With IEEE 802.11: Feasibility Demonstration Through Measurements. IEEE Transactions on Vehicular Technology, 2018, 67, 1404-1416.	3.9	56
197	A Cross-Layer Design for Perceptual Optimization Of H.264/SVC with Unequal Error Protection. IEEE Journal on Selected Areas in Communications, 2012, 30, 1157-1171.	9.7	55
198	Rate bounds for MIMO relay channels using precoding. , 2005, , .		54

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