Laurent Schmalen

List of Publications by Year
in descending order

110	2,584	394421	361022
papers	citations	19 h-index	35 g-index

111	111	111	1619
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Error-and-Erasure Decoding of Product and Staircase Codes. IEEE Transactions on Communications, 2022, 70, 32-44.	7.8	9
2	Machine learning for short reach optical fiber systems. , 2022, , 65-89.		0
3	Geometric Constellation Shaping for Phase-noise Channels Using a Differentiable Blind Phase Search. , 2022, , .		16
4	A novel error correction protocol for continuous variable quantum key distribution. Scientific Reports, 2021, 11, 10465.	3.3	2
5	Pruning and Quantizing Neural Belief Propagation Decoders. IEEE Journal on Selected Areas in Communications, 2021, 39, 1957-1966.	14.0	22
6	Distance-Agnostic Auto-Encoders for Short Reach Fiber Communications. , 2021, , .		5
7	Blind Equalization for Coherent Optical Communications Based on Variational Inference. , 2021, , .		3
8	Deep Reinforcement Learning for Wireless Resource Allocation Using Buffer State Information. , 2021, , .		1
9	Beyond 400ÂGb/s Direct Detection Over 80 km for Data Center Interconnect Applications. Journal of Lightwave Technology, 2020, 38, 538-545.	4.6	23
10	Pruning Neural Belief Propagation Decoders. , 2020, , .		18
11	Experimental Investigation of Deep Learning for Digital Signal Processing in Short Reach Optical Fiber Communications. , 2020, , .		11
12	Single Sideband Transmission Employing a 1-to-4 ADC Frontend and Parallel Digitization. Journal of Lightwave Technology, 2020, 38, 3125-3134.	4.6	2
13	DSP Enabled Optical Detection Techniques for PON. Journal of Lightwave Technology, 2020, 38, 684-695.	4.6	18
14	End-to-End Learning in Optical Fiber Communications: Experimental Demonstration and Future Trends. , 2020, , .		1
15	End-to-End Learning in Optical Fiber Communications: Concept and Transceiver Design. , 2020, , .		4
16	Challenges in Coding, DSP and Parallel Operation of Quantum Key Distribution and Coherent Data Transmission. , 2020, , .		0
17	Concept and Experimental Demonstration of Optical IM/DD End-to-End System Optimization using a Generative Model. , 2020, , .		18
18	Forward Error Correction for Optical Transponders. Springer Handbooks, 2020, , 177-257.	0.6	7

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19	Optical Fiber Communication Systems Based on End-to-End Deep Learning : (Invited Paper). , 2020, , .		2
20	Decoder-in-the-Loop: Genetic Optimization-Based LDPC Code Design. IEEE Access, 2019, 7, 141161-141170.	4.2	21
21	Spatially Coupled LDPC Codes with Non-uniform Coupling for Improved Decoding Speed. , 2019, , .		1
22	Deep Learning for Communication over Dispersive Nonlinear Channels: Performance and Comparison with Classical Digital Signal Processing. , 2019, , .		8
23	End-to-end optimized transmission over dispersive intensity-modulated channels using bidirectional recurrent neural networks. Optics Express, 2019, 27, 19650.	3.4	71
24	Trans-Atlantic Field Trial Using High Spectral Efficiency Probabilistically Shaped 64-QAM and Single-Carrier Real-Time 250-Gb/s 16-QAM. Journal of Lightwave Technology, 2018, 36, 103-113.	4.6	71
25	25.4-Tb/s Transmission Over Transpacific Distances Using Truncated Probabilistically Shaped PDM-64QAM. Journal of Lightwave Technology, 2018, 36, 1354-1361.	4.6	20
26	Modulation on Discrete Nonlinear Spectrum: Perturbation Sensitivity and Achievable Rates. IEEE Photonics Technology Letters, 2018, 30, 423-426.	2.5	17
27	Finite-Length Analysis of Spatially-Coupled Regular LDPC Ensembles on Burst-Erasure Channels. IEEE Transactions on Information Theory, 2018, 64, 3431-3449.	2.4	6
28	A Compressed Sensing Approach for Distribution Matching. , 2018, , .		4
29	Avoiding Burst-like Error Patterns in Windowed Decoding of Spatially Coupled LDPC Codes. , 2018, , .		17
30	Performance Metrics for Communication Systems with Forward Error Correction. , 2018, , .		1
31	Experimental Demonstration of a Dispersion Tolerant End-to-End Deep Learning-Based IM-DD Transmission System. , 2018, , .		14
32	Probabilistic Eigenvalue Shaping for Nonlinear Fourier Transform Transmission. Journal of Lightwave Technology, 2018, 36, 4799-4807.	4.6	11
33	End-to-End Deep Learning of Optical Fiber Communications. Journal of Lightwave Technology, 2018, 36, 4843-4855.	4.6	256
34	Flexible Transmission Enabled by Novel M2-QAM Formats with Record Distance - Spectral Efficiency Tuneability. , 2018, , .		5
35	Probabilistic Constellation Shaping: Challenges and Opportunities for Forward Error Correction. , 2018, , .		23
36	Optical Ethernetâ€"Flexible Optical Metro Networks. Journal of Lightwave Technology, 2017, 35, 2346-2357.	4.6	17

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37	Advanced C+L-Band Transoceanic Transmission Systems Based on Probabilistically Shaped PDM-64QAM. Journal of Lightwave Technology, 2017, 35, 1291-1299.	4.6	117
38	Field Trial of a 1 Tb/s Super-Channel Network Using Probabilistically Shaped Constellations. Journal of Lightwave Technology, 2017, 35, 1399-1406.	4.6	48
39	Performance Prediction of Nonbinary Forward Error Correction in Optical Transmission Experiments. Journal of Lightwave Technology, 2017, 35, 1015-1027.	4.6	48
40	Non-uniformly coupled LDPC codes: Better thresholds, smaller rate-loss, and less complexity. , 2017, , .		10
41	Normalized Generalized Mutual Information as a Forward Error Correction Threshold for Probabilistically Shaped QAM. , 2017, , .		106
42	Beating Bandwidth Limitation for High-speed PAM-4 Transmission Based on Turbo Equalizer. , 2017, , .		1
43	Distributed Transmission and Spatially Coupled Forward Error Correction in Regenerative Multipoint-to-Point Networks. , 2017, , .		0
44	Inter-Channel Crosstalk Compensation for Time-Frequency Packing Systems. , 2017, , .		3
45	Near Capacity 24.6 Tb/s Transmission over 10,285km Straight Line Testbed at 5.9 b/s/Hz Spectral Efficiency Using TPCS-64QAM and C-Band EDFA-Only. , 2017, , .		1
46	Spectrally Efficient Probabilistically Shaped Square 64QAM to 256 QAM. , 2017, , .		6
47	56 Gbaud Probabilistically Shaped PAM8 for Data Center Interconnects. , 2017, , .		33
48	On the Design of Coded Modulation for Fiber Optical Communications. , 2017, , .		3
49	Single Carrier 1.2 Tbit/s Transmission over 300 km with PM-64 QAM at 100 GBaud. , 2017, , .		60
50	Distributed Rate-Adaptive Staircase Codes for Connectionless Optical Metro Networks. , 2017, , .		4
51	Experimental Demonstration of Probabilistically Shaped QAM. , 2017, , .		3
52	Nonlinear Mitigation using Probabilistically Shaped Real-Valued Modulation Formats. , 2017, , .		1
53	Electronically Subcarrier Multiplexed PM-32QAM with Optimized FEC Overheads. , 2017, , .		6
54	Transmit Filter Optimization for Improved Performance of Time-Frequency Packing Systems. , 2017, , .		0

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55	Flexible Optical Transmission close to the Shannon Limit by Probabilistically Shaped QAM. , 2017, , .		12
56	Signal Processing for Spectrally Efficient Systems. , 2017, , .		0
57	Spatially Coupled LDPC codes affected by a single random burst of erasures. , 2016, , .		2
58	Wave-like decoding of tail-biting spatially coupled LDPC codes through iterative demapping. , 2016, , .		4
59	Triggering wave-like convergence of tail-biting spatially coupled LDPC codes. , 2016, , .		11
60	Rate Adaptation and Reach Increase by Probabilistically Shaped 64-QAM: An Experimental Demonstration. Journal of Lightwave Technology, 2016, 34, 1599-1609.	4.6	492
61	Submarine Transmission Systems Using Digital Nonlinear Compensation and Adaptive Rate Forward Error Correction. Journal of Lightwave Technology, 2016, 34, 1886-1895.	4.6	50
62	Predicting the Performance of Nonbinary Forward Error Correction in Optical Transmission Experiments. , 2016, , .		10
63	Joint Coding Rate and Modulation Format Optimization for 8QAM Constellations Using BICM Mutual Information. , 2015, , .		16
64	Low latency digital regenerator for dual polarization QAM signals. , 2015, , .		2
65	Spatially-Coupled LDPC Protograph Codes for Universal Phase Slip-Tolerant Differential Decoding. , 2015, , .		5
66	54.2 Tb/s transoceanic transmission using ultra low loss fiber, multi-rate FEC and digital nonlinear mitigation. , 2015, , .		9
67	Novel forward error correction concepts for coherent optical communications. , 2015, , .		1
68	Spatially coupled codes and optical fiber communications: An ideal match?. , 2015, , .		6
69	Transoceanic Transmission Systems Using Adaptive Multirate FECs. Journal of Lightwave Technology, 2015, 33, 1479-1487.	4.6	38
70	Spectrally-Efficient 400-Gb/s Single Carrier Transport Over 7 200 km. Journal of Lightwave Technology, 2015, 33, 1402-1407.	4.6	28
71	GPU Accelerated Belief Propagation Decoding of Non-Binary LDPC Codes with Parallel and Sequential Scheduling. Journal of Signal Processing Systems, 2015, 78, 21-34.	2.1	8
72	Spectrally Efficient 1-Tb/s Transceivers for Long-Haul Optical Systems. Journal of Lightwave Technology, 2015, 33, 1452-1458.	4.6	26

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73	Construction of protographs for large-girth structured LDPC convolutional codes. , 2015, , .		21
74	A Low-Complexity LDPC Coding Scheme for Channels With Phase Slips. Journal of Lightwave Technology, 2015, 33, 1319-1325.	4.6	8
75	Optical Nonlinear Phase Noise Compensation for <inline-formula><tex-math>$9imes 32$</tex-math> </inline-formula>-Gbaud PolDM-16 QAM Transmission Using a Code-Aided Expectation-Maximization Algorithm. Journal of Lightwave Technology, 2015, 33, 3679-3686.	4.6	20
76	Spatially Coupled Soft-Decision Error Correction for Future Lightwave Systems. Journal of Lightwave Technology, 2015, 33, 1109-1116.	4.6	152
77	M-ary phase shift keying receiver beating the standard quantum limit for any signal power. , 2014, , .		0
78	Optimized spectrally efficient transceiver for 400-Gb/s single carrier transport. , 2014, , .		17
79	Laterally connected spatially coupled code chains for transmission over unstable parallel channels. , 2014, , .		11
80	Next generation error correcting codes for lightwave systems. , 2014, , .		8
81	Optimization of time-division hybrid-modulation and its application to rate adaptive 200Gb transmission. , 2014, , .		6
82	Low-complexity phase slip tolerant LDPC-based FEC scheme. , 2014, , .		4
83	Experimental Performance of 4D Optimized Constellation Alternatives for PM-8QAM and PM-16QAM. , 2014, , .		13
84	Implementation of 64QAM at 42.66 GBaud Using 1.5 Samples per Symbol DAC and Demonstration of up to 300 km Fiber Transmission. , 2014, , .		40
85	Evaluation of left-terminated spatially coupled LDPC codes for optical communications. , 2014, , .		10
86	Energy Efficient FEC for Optical Transmission Systems. , 2014, , .		6
87	Status and Recent Advances on Forward Error Correction Technologies for Lightwave Systems. Journal of Lightwave Technology, 2014, 32, 2735-2750.	4.6	116
88	52.9 Tb/s transmission over transoceanic distances using adaptive multi-rate FEC. , 2014, , .		20
89	Forward error correction in optical core and optical access networks. Bell Labs Technical Journal, 2013, 18, 39-66.	0.7	20
90	Implementation Aspects of Coherent Transmit and Receive Functions in Application-Specific Integrated Circuits. , 2013, , 555-588.		2

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91	On the convergence speed of spatially coupled LDPC ensembles. , 2013, , .		35
92	High speed decoding of non-binary irregular LDPC codes using GPUs. , 2013, , .		8
93	Windowed iterative source-channel decoding with delay constraints. , 2012, , .		0
94	Estimation of Soft FEC Performance in Optical Transmission Experiments. IEEE Photonics Technology Letters, 2011, 23, 1547-1549.	2.5	110
95	Space-Time Coding Schemes for Optical MIMO. , 2011, , .		0
96	Iterative Sourceâ€“Channel Decoding With Reduced Error Floors. IEEE Journal on Selected Topics in Signal Processing, 2011, 5, 1577-1587.	10.8	3
97	EXIT Chart Based System Design for Iterative Source-Channel Decoding with Fixed-Length Codes. IEEE Transactions on Communications, 2011, 59, 2406-2413.	7.8	12
98	A Generic Tool for Assessing the Soft-FEC Performance in Optical Transmission Experiments. IEEE Photonics Technology Letters, 2011, , .	2.5	19
99	Improved Decoding of Binary and Non-Binary LDPC Codes by Probabilistic Shuffled Belief Propagation. , 2011, , .		3
100	Turbo Source Compression with Jointly Optimized Inner Irregular and Outer Irregular Codes. , 2010, , .		1
101	Near-lossless compression and protection by turbo source-channel (de-)coding using irregular index assignments. , 2009, , .		1
102	OFDM Turbo DeCodulation with exit optimized bit loading and signal constellations. , 2009, , .		0
103	On redundant index assignments for iterative source-channel decoding. IEEE Communications Letters, 2008, 12, 514-516.	4.1	7
104	Complexity-reduced iterative source-channel decoding by conditional quantization. , 2008, , .		1
105	Joint source-channel coding with inner irregular codes. , 2008, , .		5
106	Graph-Based Turbo DeCodulation with LDPC Codes. IEEE Vehicular Technology Conference, 2008, , .	0.4	0
107	Iterative source-coded equalization: turbo error concealment for ISI channels. , 2007, , .		0
108	On the EXIT Characteristics of Feed Forward Convolutional Codes. , 2007, , .		0

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109	Separation of Recursive Convolutional Codes into Sub-Codes using Galois Field Arithmetic. , 2006, , .		1
110	Iterative Source-Channel Decoding & Turbo DeCodulation. , 0, , 365-398.		5