Francesco Da Ros

List of Publications by Year
in descending order

166 papers	2,503 citations	257450 24 h-index	233421 45 g-index
166 all docs	166 docs citations	166 times ranked	2028 citing authors

#	Article	IF	Citations
1	Lumped Compensation of Nonlinearities based on Optical Phase Conjugation. Journal of Lightwave Technology, 2022, 40, 681-691.	4.6	8
2	Spectral and Spatial Power Evolution Design With Machine Learning-Enabled Raman Amplification. Journal of Lightwave Technology, 2022, 40, 3546-3556.	4.6	6
3	End-to-end learning for fiber-optic communication systems. , 2022, , 115-139.		3
4	End-to-End Learning of a Constellation Shape Robust to Channel Condition Uncertainties. Journal of Lightwave Technology, 2022, 40, 3316-3324.	4.6	17
5	Machine learning applied to inverse systems design. , 2022, , .		3
6	Probabilistic Shaping for the Optical Phase Conjugation Channel. IEEE Journal of Selected Topics in Quantum Electronics, 2021, 27, 1-16.	2.9	9
7	Probabilistically Shaped 4-PAM for Short-Reach IM/DD Links With a Peak Power Constraint. Journal of Lightwave Technology, 2021, 39, 400-405.	4.6	23
8	Multiâ€"Band Programmable Gain Raman Amplifier. Journal of Lightwave Technology, 2021, 39, 429-438.	4.6	36
9	End-to-End Optimization of Coherent Optical Communications Over the Split-Step Fourier Method Guided by the Nonlinear Fourier Transform Theory. Journal of Lightwave Technology, 2021, 39, 418-428.	4.6	35
10	909.5 Tbit/s Dense SDM and WDM Transmission Based on a Single Source Optical Frequency Comb and Kramers-Kronig Detection. IEEE Journal of Selected Topics in Quantum Electronics, 2021, 27, 1-8.	2.9	9
11	SNR Optimization of Multi-Span Fiber Optic Communication Systems Employing EDFAs With Non-Flat Gain And Noise Figure. Journal of Lightwave Technology, 2021, 39, 6824-6832.	4.6	15
12	Experimental Characterization of Raman Amplifier Optimization Through Inverse System Design. Journal of Lightwave Technology, 2021, 39, 1162-1170.	4.6	17
13	Machine-learning-based equalization for short-reach transmission: neural networks and reservoir computing. , 2021, , .		7
14	Simultaneous gain profile design and noise figure prediction for Raman amplifiers using machine learning. Optics Letters, 2021, 46, 1157.	3.3	8
15	Experimental Investigation of Optoelectronic Receiver With Reservoir Computing in Short Reach Optical Fiber Communications. Journal of Lightwave Technology, 2021, 39, 2460-2467.	4.6	24
16	Power Evolution Modeling and Optimization of Fiber Optic Communication Systems With EDFA Repeaters. Journal of Lightwave Technology, 2021, 39, 3154-3161.	4.6	13
17	FEC-assisted Nonlinearity Compensation for Coherent Optical Receivers. , 2021, , .		0
18	Inverse design of a Raman amplifier in frequency and distance domains using convolutional neural networks. Optics Letters, 2021, 46, 2650.	3.3	7

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19	Symmetry Enhancement Through Advanced Dispersion Mapping in OPC-Aided Transmission. Journal of Lightwave Technology, 2021, 39, 2820-2829.	4.6	14
20	Machine learning enabled Raman amplifiers. , 2021, , .		0
21	Distance and spectral power profile shaping using machine learning enabled Raman amplifiers. , 2021, , .		1
22	Optimization of Raman amplifiers using machine learning. , 2021, , .		0
23	Optimization of frequency combs spectral-flatness using evolutionary algorithm. Optics Express, 2021, 29, 23447.	3.4	6
24	Approaching optimum phase measurement in the presence of amplifier noise. Optica, 2021, 8, 1262.	9.3	7
25	Gradient-Free Training of Autoencoders for Non-Differentiable Communication Channels. Journal of Lightwave Technology, 2021, 39, 6381-6391.	4.6	16
26	Optimization of a Hybrid EDFA-Raman C+L Band Amplifier through Neural-Network Models. , 2021, , .		3
27	Multi-band programmable gain Raman amplifier for high-capacity optical networks. , 2021, , .		1
28	Generalization Properties of Machine Learning-based Raman Models. , 2021, , .		4
29	Optical processing and manipulation of wavelength division multiplexed signals. , 2020, , 233-299.		2
30	Inverse System Design Using Machine Learning: The Raman Amplifier Case. Journal of Lightwave Technology, 2020, 38, 736-753.	4.6	63
31	Probabilistically Shaped Rate-Adaptive Polar-Coded 256-QAM WDM Optical Transmission System. Journal of Lightwave Technology, 2020, 38, 1800-1808.	4.6	11
32	Optimization of Fiber Optics Communication Systems via End-to-End Learning. , 2020, , .		1
33	Frequency-domain ultrafast passive logic: NOT and XNOR gates. Nature Communications, 2020, 11, 5839.	12.8	15
34	Experimental Demonstration of Nonlinear Frequency Division Multiplexing Transmission With Neural Network Receiver. Journal of Lightwave Technology, 2020, 38, 6465-6473.	4.6	17
35	Reservoir-Computing Based Equalization With Optical Pre-Processing for Short-Reach Optical Transmission. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-12.	2.9	17
36	All-Optical Nonlinear Pre-Compensation of Long-Reach Unrepeatered Systems. , 2020, , .		3

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37	End-to-end optimized nonlinear Fourier transform-based coherent communications. , 2020, , .		6
38	Advancing classical and quantum communication systems with machine learning. , 2020, , .		1
39	Toward Intelligence in Photonic Systems. Optics and Photonics News, 2020, 31, 34.	0.5	8
40	Power Evolution Prediction and Optimization in a Multi-span System Based on Component-wise System Modeling. , 2020, , .		2
41	Experimental Demonstration of Optoelectronic Equalization for Short-reach Transmission with Reservoir Computing. , 2020, , .		4
42	Machine learning-based EDFA Gain Model Generalizable to Multiple Physical Devices. , 2020, , .		10
43	Nonlinear Phase-Shift Cancellation in Dispersion-Shifted Fiber Transmission by All-Optical Back-Propagation. , 2020, , .		1
44	Noise statistics and its implications on optimal constellation shapes for channels with optical phase conjugation. , 2020, , .		1
45	Nonlinear Fourier Transform: Perpetual Research Topic or Future Game-Changer?. , 2020, , .		1
46	Experimental demonstration of arbitrary Raman gain–profile designs using machine learning. , 2020, , .		6
47	Improved nonlinearity compensation of OPC-aided EDFA- amplified transmission by enhanced dispersion mapping. , 2020, , .		5
48	Characterization and Optical Compensation of LP01 and LP11 Intra-modal Nonlinearity in Few-Mode Fibers. , 2020, , .		1
49	Four-wave mixing conversion efficiency requirements for optical phase conjugation based fiber nonlinearity compensation. , 2020, , .		2
50	Coherent WDM PON using a Single Time Lens Source and Kramers-Kronig Receiver. , 2019, , .		0
51	Impact of Transmitter Phase Noise on NFDM Transmission With Discrete Spectral Modulation. IEEE Photonics Technology Letters, 2019, 31, 1767-1770.	2.5	8
52	Co-Existence of 87 Mbit/s Quantum and 10 Gbit/s Classical Communications in 37-Core Fiber. , 2019, , .		1
53	Tunable Optoelectronic Chromatic Dispersion Compensation Based on Machine Learning for Short-Reach Transmission. Applied Sciences (Switzerland), 2019, 9, 4332.	2.5	13
54	Characterization and Optimization of Four-Wave-Mixing Wavelength Conversion System. Journal of Lightwave Technology, 2019, 37, 5628-5636.	4.6	21

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55	Dual-Polarization NFDM Transmission With Continuous and Discrete Spectral Modulation. Journal of Lightwave Technology, 2019, 37, 2335-2343.	4.6	41
56	Unrepeatered Transmission Reach Extension by Receiver-Side all-Optical Back-Propagation. , 2019, , .		5
57	Simultaneous 256 WDM Channel Generation using a Single AlGaAsOI Waveguide based Time Lens Source. , 2019, , .		0
58	Enhanced dispersion mapping for OPC-aided transmission systems. , 2019, , .		3
59	Boosting the secret key rate in a shared quantum and classical fibre communication system. Communications Physics, 2019, 2, .	5.3	48
60	Joint Low-Complexity Opto-Electronic Chromatic Dispersion Compensation for Short-Reach Transmission. , 2019, , .		1
61	Perturbation-Based FEC-Assisted Iterative Nonlinearity Compensation for WDM Systems. Journal of Lightwave Technology, 2019, 37, 875-881.	4.6	17
62	Optical Phase Conjugation in a Silicon Waveguide With Lateral p-i-n Diode for Nonlinearity Compensation. Journal of Lightwave Technology, 2019, 37, 323-329.	4.6	10
63	Low-complexity carrier phase recovery based on principal component analysis for square-QAM modulation formats. Optics Express, 2019, 27, 15617.	3.4	30
64	All-optical OFDM demultiplexing with optical partial Fourier transform and coherent sampling. Optics Letters, 2019, 44, 443.	3.3	5
65	Novel Hybrid Radio-over-Fiber Transmitter for Generation of Flexible Combination of WDM-ROF/WDM Channels. , 2019, , .		3
66	Impact of Laser Phase Noise on Nonlinear Frequency Division Multiplexing Systems. , 2019, , .		1
67	Manipulation and Optical Processing of WDM Signals Using Optical Time Lenses. , 2019, , .		0
68	0.4 THz Photonic-Wireless Link With 106 Gb/s Single Channel Bitrate. Journal of Lightwave Technology, 2018, 36, 610-616.	4.6	113
69	Scalable WDM phase regeneration in a single phase-sensitive amplifier through optical time lenses. Nature Communications, 2018, 9, 1049.	12.8	26
70	Optimization of DP-M-QAM Transmitter Using Cooperative Coevolutionary Genetic Algorithm. Journal of Lightwave Technology, 2018, 36, 2450-2462.	4.6	29
71	Ultrahigh-Spectral-Efficiency WDM/SDM Transmission Using PDM-1024-QAM Probabilistic Shaping With Adaptive Rate. Journal of Lightwave Technology, 2018, 36, 1304-1308.	4.6	17
72	Optimizing the Achievable Rates of Tricky Channels: A Probabilistic Shaping for OPC Channel Example. , 2018, , .		2

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73	Nonlinearity Compensation through Optical Phase Conjugation for Improved Transmission Reach/Rate. , 2018, , .		0
74	Record-High Secret Key Rate for Joint Classical and Quantum Transmission Over a 37-Core Fiber. , 2018, , .		13
75	Kramersâ€"Kronig Detection with Adaptive Rates for 909.5 Tbit/s Dense SDM and WDM Data Channels. , 2018, , .		7
76	Dual-Polarization NFDM Transmission Using Distributed Raman Amplification and NFT-Domain Equalization. IEEE Photonics Technology Letters, 2018, 30, 1983-1986.	2.5	33
77	100s Gigabit/s THz Communication. , 2018, , .		6
78	12 mode, WDM, MIMO-free orbital angular momentum transmission. Optics Express, 2018, 26, 20225.	3.4	77
79	Single-source chip-based frequency comb enabling extreme parallel data transmission. Nature Photonics, 2018, 12, 469-473.	31.4	165
80	Dual-polarization nonlinear Fourier transform-based optical communication system. Optica, 2018, 5, 263.	9.3	111
81	Dual-polarization wavelength conversion of 16-QAM signals in a single silicon waveguide with a lateral p-i-n diode [Invited]. Photonics Research, 2018, 6, B23.	7.0	8
82	Clock Recovery Challenges in DSP-Based Coherent Single-Mode and Multi-Mode Optical Systems. Future Internet, 2018, 10, 59.	3.8	2
83	Experimental Verification of Rate Flexibility and Probabilistic Shaping by 4D Signaling. , 2018, , .		8
84	Silicon Waveguide with Lateral p-i-n Diode for Nonlinearity Compensation by On-Chip Optical Phase Conjugation. , 2018, , .		8
85	128Ã— 2 Gb/s WDM PON System with a Single TDM Time Lens Source using an AlGaAs-On-Insulator Waveguide. , 2018, , .		4
86	Nonlinearity Compensation for Dual-Polarization Signals using Optical Phase Conjugation in a Silicon Waveguide. , 2018, , .		2
87	Experimental Comparison of Probabilistic Shaping with online PMF Optimization and Mid-link OPC. , 2018, , .		5
88	Highly Flexible WDM PON System with a Single TDM Time Lens Source Enabling Record 150 km Downstream Reach. , 2018, , .		2
89	Signal-to-Idler Conversion Penalty in AlGaAs-on-Insulator Wavelength Converter. , 2018, , .		5
90	Link-Placement Characterization of Optical Phase Conjugation for Nonlinearity Compensation. , 2018, , .		2

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91	Impact of Phase-Filtering on Optical Spectral Reshaping with Microring Resonators for Directly-Modulated 4-PAM Signals. , 2018, , .		0
92	Nonlinear Phase Noise Compensation in Experimental WDM Systems With 256QAM. Journal of Lightwave Technology, 2017, 35, 1438-1443.	4.6	18
93	Synchronization in a Random Length Ring Network for SDN-Controlled Optical TDM Switching. Journal of Optical Communications and Networking, 2017, 9, A26.	4.8	3
94	Supercontinuum comb sources for broadband communications based on AlGaAs-on-insulator. Proceedings of SPIE, 2017, , .	0.8	1
95	25-Gb/s Transmission Over 2.5-km SSMF by Silicon MRR Enhanced 1.55- $mu ext{m}$ III-V/SOI DML. IEEE Photonics Technology Letters, 2017, 29, 960-963.	2.5	6
96	Wavelength conversion of QAM signals in a low loss CMOS compatible spiral waveguide. APL Photonics, 2017, 2, 046105.	5.7	17
97	A configurable FPGA FEC unit for Tb/s optical communication. , 2017, , .		2
98	Characterization and Optimization of a High-Efficiency AlGaAs-On-Insulator-Based Wavelength Converter for 64- and 256-QAM Signals. Journal of Lightwave Technology, 2017, 35, 3750-3757.	4.6	41
99	Time Skew Estimator for Dual-Polarization QAM Transmitters. , 2017, , .		5
100	Impact of Signal-Conjugate Wavelength Shift on Optical Phase Conjugation-based Transmission of QAM Signals. , 2017, , .		6
101	Adaptive Rates of High-Spectral-Efficiency WDM/SDM Channels Using PDM-1024-QAM Probabilistic Shaping. , 2017, , .		0
102	Experimental Demonstration of Dual Polarization Nonlinear Frequency Division Multiplexed Optical Transmission System. , 2017, , .		12
103	1.5-Î¼m Directly modulated transmission over 66 km of SSMF with an integrated hybrid III-V/SOI DFB laser. , 2017, , .		0
104	Ultra-Broadband Optical Signal Processing using AlGaAs-OI Devices. , 2017, , .		0
105	25-Gb/s transmission over 2.5-km SSMF by silicon MRR enhanced 1.55-Î¼m III-V/SOI DML. , 2017, , .		0
106	Optical spectral reshaping for directly modulated 4-pulse amplitude modulation signals. , 2017, , .		0
107	Experimental Comparison of Probabilistic Shaping Methods for Unrepeated Fiber Transmission. Journal of Lightwave Technology, 2017, 35, 4871-4879.	4.6	65
108	12 Mode, MIMO-Free OAM Transmission. , 2017, , .		8

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109	Regeneration of Phase Unlocked Serial Multiplexed DPSK Signals in a Single Phase Sensitive Amplifier. , 2017, , .		5
110	Single Channel 106 Gbit/s 16QAM Wireless Transmission in the 0.4 THz Band. , 2017, , .		18
111	Experimental analysis of pilot-based equalization for probabilistically shaped WDM systems with 256QAM/1024QAM. , 2017, , .		14
112	4-PAM Dispersion-Uncompensated Transmission with Micro-Ring Resonator Enhanced 1.55-µm DML. , 2017, , .		2
113	Bit-rate-transparent optical RZ-to-NRZ format conversion based on linear spectral phase filtering. , 2017, , .		0
114	Directly Modulated and ER Enhanced Hybrid III-V/SOI DFB Laser Operating up to 20 Gb/s for Extended Reach Applications in PONs. , 2017, , .		1
115	An ultra-efficient nonlinear planar integrated platform for optical signal processing and generation. , 2017, , .		1
116	Two-Stage n-PSK Partitioning Carrier Phase Recovery Scheme for Circular mQAM Coherent Optical Systems. Photonics, 2016, 3, 37.	2.0	4
117	THz photonic wireless links with 16-QAM modulation in the 375-450 GHz band. Optics Express, 2016, 24, 23777.	3.4	44
118	Ultra-broadband Nonlinear Optical Signal Processing for Optical Communications. , 2016, , .		0
119	Phase-sensitive four-wave mixing in AlGaAs-on-insulator nano-waveguides. , 2016, , .		2
120	16-QAM field-quadrature decomposition using polarization-assisted phase sensitive amplification. , 2016, , .		4
121	260 Gbit/s photonic-wireless link in the THz band. , 2016, , .		47
122	Constellation Shaping for WDM Systems Using 256QAM/1024QAM With Probabilistic Optimization. Journal of Lightwave Technology, 2016, 34, 5146-5156.	4.6	105
123	On-chip mode division multiplexing technologies. , 2016, , .		0
124	Experimental Demonstration of Multidimensional Switching Nodes for All-Optical Data Center Networks. Journal of Lightwave Technology, 2016, 34, 1837-1843.	4.6	24
125	Single-Source AlGaAs Frequency Comb Transmitter for 661 Tbit/s Data Transmission in a 30-core Fiber. , 2016, , .		15
126	Low-penalty up to 16-QAM wavelength conversion in a low loss CMOS compatible spiral waveguide. , 2016, , .		1

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127	Wavelength Conversion of QPSK and 16-QAM Coherent Signals in a CMOS Compatible Spiral Waveguide. , 2016, , .		0
128	Broadband and Efficient Dual-Pump Four-Wave-Mixing in AlGaAs-On-Insulator Nano-Waveguides. , 2016, , .		2
129	Performance of Multi-Channel DBP with Long-haul Frequency-Referenced Transmission. , 2016, , .		1
130	Tolerance of Continuous NFT Spectrum to Optical Fiber Channel Impairments. , 2016, , .		0
131	QPSK Regeneration without Active Phase-Locking. , 2016, , .		2
132	Synchronization Algorithm for SDN-controlled All-Optical TDM Switching in a Random Length Ring Network. , 2016, , .		2
133	A novel phase sensitive amplifier based QPSK regenerator without active phase-locking. , 2015, , .		2
134	Phase-sensitive optical processing in silicon waveguides. , 2015, , .		3
135	Experimental demonstration of 6-mode division multiplexed NG-PON2: Cost effective 40 Gbit/s/spatial-mode access based on 3D laser inscribed photonic lanterns. , 2015, , .		7
136	Experimental demonstration of multidimensional switching nodes for all-optical data centre networks. , 2015, , .		2
137	Kerr Nonlinearity Mitigation: Mid-Link Spectral Inversion Versus Digital Backpropagation in 5Ã—28-GBd PDM 16-QAM Signal Transmission. Journal of Lightwave Technology, 2015, 33, 1821-1827.	4.6	52
138	Phase Regeneration of a BPSK Data Signal Using a Lithium Niobate Phase Modulator. Journal of Lightwave Technology, 2015, 33, 2189-2198.	4.6	2
139	Multichannel nonlinear distortion compensation using optical phase conjugation in a silicon nanowire. Optics Express, 2015, 23, 3640.	3.4	19
140	Perspectives of long-haul WDM transmission systems based on phase-insensitive fiber-optic parametric amplifiers. , 2015, , .		0
141	Optical phase conjugation for nonlinearity compensation in WDM PDM 16-QAM transmission over dispersion-compensated and dispersion-uncompensated links. , 2015, , .		1
142	Signal Processing for On-Chip Space Division Multiplexing. , 2015, , .		2
143	Kerr nonlinearity compensation in a 5Ã—28-GBd PDM 16-QAM WDM system using fiber-based optical phase conjugation. , 2014, , .		5
144	Experimental demonstration of an OFDM receiver based on a silicon-nanophotonic discrete Fourier transform filter. , 2014, , .		1

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145	All-optical signal processing using silicon devices. , 2014, , .		1
146	Design and performance evaluation of an OPC device using a dual-pump polarization-independent FOPA. , 2014, , .		10
147	Kerr nonlinearity mitigation in 5 Ã— 28-GBd PDM 16-QAM signal transmission over a dispersion-uncompensated link with backward-pumped distributed Raman amplification. Optics Express, 2014, 22, 27381.	3.4	37
148	Parametric Optical Signal Processing in Silicon Waveguides with Reverse-Biased p-i-n Junctions. , 2014, , .		1
149	Phase regeneration of DPSK signals in a silicon waveguide with reverse-biased p-i-n junction. Optics Express, 2014, 22, 5029.	3.4	75
150	Simultaneous QPSK-to-<inline-formula> <tex-math notation="TeX">(2imes) </tex-math></inline-formula>BPSK Wavelength and Modulation Format Conversion in PPLN. IEEE Photonics Technology Letters, 2014, 26, 1207-1210.	2.5	32
151	High efficiency wavelength conversion of 40 Gbps signals at 1550 nm in SOI nano-rib waveguides using p-i-n diodes. , 2013, , .		1
152	A comparison of nonlinear media for parametric all-optical signal processing. , 2013, , .		1
153	Allâ€optical threeâ€input logic minterms generation using semiconductor optical amplifierâ€based Sagnac interferometer. Electronics Letters, 2013, 49, 1467-1468.	1.0	2
154	On-chip two-mode division multiplexing using tapered directional coupler-based mode multiplexer and demultiplexer. Optics Express, 2013, 21, 10376.	3.4	367
155	Polarization diversity DPSK demodulator on the silicon-on-insulator platform with simple fabrication. Optics Express, 2013, 21, 7828.	3.4	13
156	QPSK-to-2Ã—BPSK wavelength and modulation format conversion through phase-sensitive four-wave mixing in a highly nonlinear optical fiber. Optics Express, 2013, 21, 28743.	3.4	35
157	Continuous wave phase-sensitive four-wave mixing in silicon waveguides with reverse-biased p-i-n junctions. , 2013, , .		2
158	All-optical Network Coding for DPSK signals. , 2013, , .		17
159	Orthogonal Phase Quadratures Conversion to Different Wavelengths Through Phase-Sensitive Four Wave Mixing in an Highly Nonlinear Fiber. , 2013, , .		0
160	Polarization Diversity DPSK Demodulator on the Silicon-on-Insulator Platform with Simple Fabrication. , 2013, , .		0
161	Signal Quality Enhancement of Directly-Modulated VCSELs Using a Micro-Ring Resonator Transfer Function. , 2013, , .		0
162	Gain optimization in fiber optical parametric amplifiers by combining standard and high-SBS threshold highly nonlinear fibers. , 2012, , .		2

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163	Demonstration of Cascaded In-Line Single-Pump Fiber Optical Parametric Amplifiers in Recirculating Loop Transmission. , 2012, , .		8
164	Pulse Distortion in Saturated Fiber Optical Parametric Chirped Pulse Amplification. , 2012, , .		0
165	Impact of Gain Saturation on the Parametric Amplification of 16-QAM Signals. , 2012, , .		3
166	QPSK phase regeneration in saturated degenerate dual-pump phase sensitive amplifiers. , 2011, , .		1