Marcelo A Soto

List of Publications by Year
in descending order

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163 papers	4,260 citations	126907 33 h-index	114465 63 g-index
165 all docs	165 docs citations	165 times ranked	1515 citing authors

#	Article	IF	Citations
1	Modeling and evaluating the performance of Brillouin distributed optical fiber sensors. Optics Express, 2013, 21, 31347.	3.4	400
2	Simplex-coded BOTDA fiber sensor with 1 m spatial resolution over a 50 km range. Optics Letters, 2010, 35, 259.	3.3	284
3	Intensifying the response of distributed optical fibre sensors using 2D and 3D image restoration. Nature Communications, 2016, 7, 10870.	12.8	229
4	Optical sinc-shaped Nyquist pulses of exceptional quality. Nature Communications, 2013, 4, 2898.	12.8	195
5	Extending the Real Remoteness of Long-Range Brillouin Optical Time-Domain Fiber Analyzers. Journal of Lightwave Technology, 2014, 32, 152-162.	4.6	149
6	Distributed shape sensing using Brillouin scattering in multi-core fibers. Optics Express, 2016, 24, 25211.	3.4	147
7	Going beyond 1000000 resolved points in a Brillouin distributed fiber sensor: theoretical analysis and experimental demonstration. Light: Science and Applications, 2016, 5, e16074-e16074.	16.6	140
8	Bipolar optical pulse coding for performance enhancement in BOTDA sensors. Optics Express, 2013, 21, 16390.	3.4	123
9	Distributed forward Brillouin sensor based on local light phase recovery. Nature Communications, 2018, 9, 2990.	12.8	116
10	Analytical model and experimental verification of the critical power for modulation instability in optical fibers. Optics Express, 2015, 23, 29514.	3.4	114
11	Long-range simplex-coded BOTDA sensor over 120km distance employing optical preamplification. Optics Letters, 2011, 36, 232.	3.3	107
12	Analysis of distributed temperature sensing based on Raman scattering using OTDR coding and discrete Raman amplification. Measurement Science and Technology, 2007, 18, 3211-3218.	2.6	97
13	Raman-based distributed temperature sensor with 1â€‰m spatial resolution over 26â€‰km SMF using low-repetition-rate cyclic pulse coding. Optics Letters, 2011, 36, 2557.	3.3	96
14	Optimization of long-range BOTDA sensors with high resolution using first-order bi-directional Raman amplification. Optics Express, 2011, 19, 4444.	3.4	95
15	Distributed acoustic sensing for seismic activity monitoring. APL Photonics, 2020, 5, .	5.7	92
16	Analysis of pulse modulation format in coded BOTDA sensors. Optics Express, 2010, 18, 14878.	3.4	87
17	Distributed phase birefringence measurements based on polarization correlation in phase-sensitive optical time-domain reflectometers. Optics Express, 2015, 23, 24923.	3.4	69
18	Temperature-strain discrimination in distributed optical fiber sensing using phase-sensitive optical time-domain reflectometry. Optics Express, 2017, 25, 16059.	3.4	66

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19	Analysis of optical pulse coding in spontaneous Brillouin-based distributed temperature sensors. Optics Express, 2008, 16, 19097.	3.4	65
20	Simplex-Coded BOTDA Sensor Over 120-km SMF With 1-m Spatial Resolution Assisted by Optimized Bidirectional Raman Amplification. IEEE Photonics Technology Letters, 2012, 24, 1823-1826.	2.5	62
21	Optimization of a DPP-BOTDA sensor with 25 cm spatial resolution over 60 km standard single-mode fiber using Simplex codes and optical pre-amplification. Optics Express, 2012, 20, 6860.	3.4	61
22	Genetic-optimised aperiodic code for distributed optical fibre sensors. Nature Communications, 2020, 11, 5774.	12.8	56
23	Brillouin-Based Distributed Temperature Sensor Employing Pulse Coding. IEEE Sensors Journal, 2008, 8, 225-226.	4.7	50
24	Novel scanning method for distortion-free BOTDA measurements. Optics Express, 2016, 24, 10188.	3.4	50
25	Enhanced Simultaneous Distributed Strain and Temperature Fiber Sensor Employing Spontaneous Brillouin Scattering and Optical Pulse Coding. IEEE Photonics Technology Letters, 2009, 21, 450-452.	2.5	47
26	Long-range Brillouin optical time-domain analysis sensor employing pulse coding techniques. Measurement Science and Technology, 2010, 21, 094024.	2.6	47
27	Impact of Loss Variations on Double-Ended Distributed Temperature Sensors Based on Raman Anti-Stokes Signal Only. Journal of Lightwave Technology, 2012, 30, 1215-1222.	4.6	45
28	Distributed temperature sensor system based on Raman scattering using correlation-codes. Electronics Letters, 2007, 43, 862.	1.0	41
29	High-Performance Raman-Based Distributed Fiber-Optic Sensing Under a Loop Scheme Using Anti-Stokes Light Only. IEEE Photonics Technology Letters, 2011, 23, 534-536.	2.5	41
30	Optimizing Image Denoising for Long-Range Brillouin Distributed Fiber Sensing. Journal of Lightwave Technology, 2018, 36, 1168-1177.	4.6	40
31	Design rules for optimizing unipolar coded Brillouin optical time-domain analyzers. Optics Express, 2018, 26, 16505.	3.4	39
32	Resolving 1 million sensing points in an optimized differential time-domain Brillouin sensor. Optics Letters, 2017, 42, 1903.	3.3	36
33	Increasing robustness of bipolar pulse coding in Brillouin distributed fiber sensors. Optics Express, 2016, 24, 586.	3.4	35
34	Time and frequency pump-probe multiplexing to enhance the signal response of Brillouin optical time-domain analyzers. Optics Express, 2014, 22, 28584.	3.4	34
35	Analysis and Reduction of Large Errors in Rayleigh-Based Distributed Sensor. Journal of Lightwave Technology, 2019, 37, 4710-4719.	4.6	34
36	SNR enhancement of Raman-based long-range distributed temperature sensors using cyclic Simplex codes. Electronics Letters, 2010, 46, 1221.	1.0	33

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37	Optical pulse coding in hybrid distributed sensing based on Raman and Brillouin scattering employing Fabryâ€“Perot lasers. Optics Express, 2010, 18, 8459.	3.4	32
38	Evaluation of the accuracy of BOTDA systems based on the phase spectral response. Optics Express, 2016, 24, 17200.	3.4	31
39	Impact of the Fiber Coating on the Temperature Response of Distributed Optical Fiber Sensors at Cryogenic Ranges. Journal of Lightwave Technology, 2018, 36, 961-967.	4.6	31
40	Distributed modular temperature-strain sensor based on optical fiber embedded in laminated composites. Composites Part B: Engineering, 2019, 168, 267-273.	12.0	31
41	Brillouin Distributed Optical Fiber Sensor Based on a Closed-Loop Configuration. Journal of Lightwave Technology, 2018, 36, 1239-1248.	4.6	29
42	Study on the signal-to-noise ratio of Brillouin optical-time domain analyzers. Optics Express, 2020, 28, 19864.	3.4	28
43	Fiber-Optic Distributed Sensor Based on Hybrid Raman and Brillouin Scattering Employing Multiwavelength Fabryâ€“PÃ‰rot Lasers. IEEE Photonics Technology Letters, 2009, 21, 1523-1525.	2.5	27
44	High-resolution distributed shape sensing using phase-sensitive optical time-domain reflectometry and multicore fibers. Optics Express, 2019, 27, 20763.	3.4	27
45	Deep-Learning-Based Earthquake Detection for Fiber-Optic Distributed Acoustic Sensing. Journal of Lightwave Technology, 2022, 40, 2639-2650.	4.6	27
46	Generation of Nyquist sinc pulses using intensity modulators. , 2013, , .		24
47	Reducing Residual Strain in Fiber Bragg Grating Temperature Sensors Embedded in Carbon Fiber Reinforced Polymers. Journal of Lightwave Technology, 2019, 37, 4650-4656.	4.6	20
48	Common-Path Dual-Comb Spectroscopy Using a Single Electro-Optic Modulator. Journal of Lightwave Technology, 2020, 38, 5107-5115.	4.6	18
49	Spectral Properties of the Signal in Phase-Sensitive Optical Time-Domain Reflectometry With Direct Detection. Journal of Lightwave Technology, 2020, 38, 1513-1521.	4.6	18
50	High performance and highly reliable Raman-based distributed temperature sensors based on correlation-coded OTDR and multimode graded-index fibers. Proceedings of SPIE, 2007, , .	0.8	16
51	Analytical expression and experimental validation of the Brillouin gain spectral broadening at any sensing spatial resolution. Proceedings of SPIE, 2017, , .	0.8	16
52	Frequency-domain technique to measure the inertial response of forward stimulated Brillouin scattering for acoustic impedance sensing. Proceedings of SPIE, 2017, , .	0.8	15
53	Hybrid Golay-coded Brillouin optical time-domain analysis based on differential pulses. Optics Letters, 2018, 43, 4574.	3.3	15
54	Evaluating Phase Errors in Phase-Sensitive Optical Time-Domain Reflectometry based on I/Q Demodulation. Journal of Lightwave Technology, 2020, , 1-1.	4.6	15

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55	Liquid Flow Meter by Fiber-Optic Sensing of Heat Propagation. Sensors, 2021, 21, 355.	3.8	15
56	Enhancing fibre-optic distributed acoustic sensing capabilities with blind near-field array signal processing. Nature Communications, 2022, 13, .	12.8	15
57	Colour simplex coding for brillouin distributed sensors. , 2013, , .		14
58	Time/frequency coding for Brillouin distributed sensors. Proceedings of SPIE, 2012, , .	0.8	13
59	Simultaneous distributed strain and temperature sensing based on combined Ramanâ€“Brillouin scattering using Fabryâ€“Perot lasers. Measurement Science and Technology, 2010, 21, 094025.	2.6	12
60	Integrated hybrid Raman/fiber Bragg grating interrogation scheme for distributed temperature and point dynamic strain measurements. Applied Optics, 2012, 51, 7268.	1.8	12
61	Time gated phase-correlation distributed Brillouin fibre sensor. , 2013, , .		12
62	Impact of optical noises on unipolar-coded Brillouin optical time-domain analyzers. Optics Express, 2021, 29, 22146.	3.4	12
63	Reliable packaging of optical fiber Bragg grating sensors for carbon fiber composite wind turbine blades. Composites Science and Technology, 2021, 213, 108933.	7.8	12
64	Advanced cyclic coding technique for long-range Raman DTS systems with meter-scale spatial resolution over standard SMF. , 2011, , .		11
65	Mitigating modulation instability in Brillouin distributed fibre sensors. Proceedings of SPIE, 2013, , .	0.8	11
66	Towards 1â€™000â€™000 resolved points in a distributed optical fibre sensor. , 2014, , .		10
67	Sources of noise in Brillouin optical time-domain analyzers. , 2015, , .		10
68	All-optical flip-flops based on dynamic Brillouin gratings in fibers. Optics Letters, 2017, 42, 2539.	3.3	10
69	Distributed Brillouin Sensing: Time-Domain Techniques. , 2018, , 1-91.		10
70	Local activation of surface and hybrid acoustic waves in optical microwires. Optics Letters, 2018, 43, 1487.	3.3	10
71	1â€™000â€™000 resolved points along a Brillouin distributed fibre sensor. , 2014, , .		9
72	Evaluating and Minimizing Induced Microbending Losses in Optical Fiber Sensors Embedded Into Glass-Fiber Composites. Journal of Lightwave Technology, 2021, 39, 7315-7325.	4.6	9

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73	Hybrid BOTDA/FBG sensor for discrete dynamic and distributed static strain/temperature measurements. , 2012, , .		8
74	Study of Raman amplification in DPP-BOTDA sensing employing Simplex coding for sub-meter scale spatial resolution over long fiber distances. Measurement Science and Technology, 2013, 24, 094018.	2.6	8
75	Brillouin distributed fibre sensing using phase modulated probe. Proceedings of SPIE, 2013, , .	0.8	8
76	MilliKelvin resolution in cryogenic temperature distributed fibre sensing based on coherent Rayleigh scattering. , 2014, , .		8
77	Modelling the depletion length induced by modulation instability in distributed optical fibre sensors. , 2014, , .		8
78	Evaluating measurement uncertainty in Brillouin distributed optical fibre sensors using image denoising. Nature Communications, 2021, 12, 4901.	12.8	8
79	Distributed optical fibre sensors based on spontaneous Brillouin scattering employing multimode Fabry-Pèrot lasers. Electronics Letters, 2009, 45, 1071.	1.0	7
80	Double-pulse Brillouin distributed optical fiber sensors: analytical model and experimental validation. , 2012, , .		7
81	Intensifying Brillouin distributed fibre sensors using image processing. , 2015, , .		7
82	Reaching millikelvin resolution in Raman distributed temperature sensing using image processing. Proceedings of SPIE, 2016, , .	0.8	7
83	Image and video denoising for distributed optical fibre sensors. Proceedings of SPIE, 2017, , .	0.8	7
84	Brillouin optical time-domain analysis over a 240 km-long fiber loop with no repeater. , 2012, , .		6
85	Mitigation of modulation instability in Brillouin distributed fiber sensors by using orthogonal polarization pulses. , 2015, , .		6
86	Impact of Fitting and Digital Filtering on Signal-to-Noise Ratio and Brillouin Frequency Shift Uncertainty of BOTDA Measurements. , 2018, , .		6
87	Polarisation pulling in Brillouin optical time-domain analysers. , 2017, , .		5
88	Rayleigh-Based Distributed Optical Fiber Sensing Using Least Mean Square Similarity. , 2018, , .		5
89	Measuring the Two-Dimensional Temperature Profile of Carbon Fiber Reinforced Polymers During Drilling Using Distributed Fiber Sensing. Journal of Lightwave Technology, 2019, 37, 4687-4696.	4.6	5
90	Alternating strain response of fibre Bragg grating sensors embedded into carbon fibre composites for wind blade health monitoring. , 2019, , .		5

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91	Power evolution along phase-sensitive parametric amplifiers: an experimental survey. Optics Letters, 2014, 39, 6114.	3.3	4
92	Optimal detection bandwidth for phase-sensitive optical time-domain reflectometry. Proceedings of SPIE, 2016, , .	0.8	4
93	Distributed Raman Sensing. , 2018, , 1-55.		4
94	Optical sinc-shaped Nyquist pulses with very low roll-off generated from a rectangular frequency comb. , 2013, , .		4
95	Boosting the spatial resolution in chirped pulse Ï•-OTDR using sub-band processing. , 2019, , .		4
96	Four wave mixing effects in gain-equalized distributed fiber raman amplifiers. , 2007, , .		3
97	30-km spontaneous-Brillouin distributed temperature sensor employing Simplex-coding and low optical input power. , 2008, , .		3
98	Analysis of Brillouin-Based Distributed Fiber Sensors Using Optical Pulse Coding. , 2008, , .		3
99	Long-range BOTDA sensing using optical pulse coding and single source bi-directional distributed Raman amplification. , 2011, , .		3
100	BOTDA sensor with 2-m spatial resolution over 120 km distance using bi-directional distributed Raman amplification. , 2011, , .		3
101	Rating the performance of a Brillouin distributed fiber sensor. Proceedings of SPIE, 2012, , .	0.8	3
102	Optimization of Detection Schemes in BOTDA. , 2016, , .		3
103	Demonstration of distributed shape sensing based on Brillouin scattering in multi-core fibers. , 2017, , .		3
104	High-resolution chirped-pulse -OTDR by means of sub-bands processing. Journal of Lightwave Technology, 2020, , 1-1.	4.6	3
105	Swelling-Based Distributed Chemical Sensing with Standard Acrylate Coated Optical Fibers. Sensors, 2021, 21, 718.	3.8	3
106	Distributed Brillouin Sensing: Time-DomainÂTechniques. , 2019, , 1663-1753.		3
107	Per-band link control transients protection in distributed fiber Raman amplifier cascades. , 2009, , .		2
108	Distributed strain and temperature sensing over 50 km of SMF with 1 m spatial resolution employing BOTDA and optical pulse coding. , 2009, , .		2

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109	Enhanced distributed hybrid sensor based on Brillouin and Raman scattering combining Fabry-Perot lasers and optical pulse coding. , 2010, , .		2
110	Bipolar pulse coding for enhanced performance in Brillouin distributed optical fiber sensors. Proceedings of SPIE, 2012, , .	0.8	2
111	Minimizing distortion and enlarging group delay in Brillouin slow light systems by gain profile optimization. , 2014, , .		2
112	Brillouin distributed fiber sensors: Practical limitations and guidelines for the making of a good sensor. , 2014, , .		2
113	200 km fiber-loop Brillouin distributed fiber sensor using bipolar Golay codes and a three-tone probe. Proceedings of SPIE, 2015, , .	0.8	2
114	Performance limit of two-pump brillouin fiber sensors obtained by Manakov Modulation Instability. , 2015, , .		2
115	Temperature sensitivity enhancement in a standard optical fiber with double coatings at low temperature. , 2017, , .		2
116	Highly tunable method to generate sinc-shaped Nyquist pulses from a rectangular frequency comb. , 2013, , .		2
117	Redistribution of pump power and impairments in gain-equalized distributed fiber Raman amplifiers due to four-wave mixing and parametric amplification. Journal of Optics, 2008, 10, 104004.	1.5	1
118	Raman-assisted DPP-BOTDA sensor employing Simplex coding with sub-meter scale spatial resolution over 93 km standard SMF. , 2012, , .		1
119	Highly sensitive dispersion map extraction from highly nonlinear fibers using BOTDA probing of parametric amplification. , 2013, , .		1
120	Enhanced response in Brillouin distributed optical fibre sensors by simultaneous time and frequency pump multiplexing. Proceedings of SPIE, 2014, , .	0.8	1
121	Brillouin distributed fiber sensing at ultra-high spatial resolution. , 2015, , .		1
122	Reaching the ultimate performance limit given by non-local effects in BOTDA sensors. , 2015, , .		1
123	Sub-metric spatial resolution over an extended range using differential time-domain Brillouin sensing. Proceedings of SPIE, 2016, , .	0.8	1
124	Novel technique for distributed fibre sensing based on coherent Rayleigh scattering measurements of birefringence. Proceedings of SPIE, 2016, , .	0.8	1
125	Gain vs phase in BOTDA setups. Proceedings of SPIE, 2016, , .	0.8	1
126	Highly sensitive distributed birefringence measurements based on a two-pulse interrogation of a dynamic Brillouin grating. , 2017, , .		1

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127	Hybrid Coding Scheme for Brillouin Optical Time-domain Analysis Based on Golay and Differential Pulses. , 2018, , .		1
128	Thermal and Residual Strain Response of an FBG-Based Temperature Sensor Embedded in Carbon Fiber Reinforced Composites. , 2018, , .		1
129	Mapping the Uniformity of Optical Microwires Using Phase-Correlation Brillouin Distributed Measurements. , 2015, , .		1
130	200 km Fiber-Loop Conventional Brillouin Distributed Sensor with 2m Spatial Resolution Using Image Denoising. , 2016, , .		1
131	Optimizing the signal-to-noise ratio for direct-detection BOTDA. , 2019, , .		1
132	High-Order Polynomial Fitting Assistance for Fast Double-Peak Finding in Brillouin-Distributed Sensing. Sensors, 2021, 21, 187.	3.8	1
133	Optical pulse coding applied to distributed temperature sensor using coherent detection of spontaneous Brillouin frequency shift. , 2008, , .		0
134	Impairments in Gain-Equalized Distributed Fiber Raman Amplifiers due to Four-Wave Mixing and Parametric Amplification Processes. AIP Conference Proceedings, 2008, , .	0.4	0
135	Use of Fabry-PÃƒÂƒÃ‚Â©rot lasers for simultaneous distributed strain and temperature sensing based on hybrid Raman and Brillouin scattering. Proceedings of SPIE, 2009, , .	0.8	0
136	Performance improvement in Brillouin-based simultaneous strain and temperature sensors employing pulse coding in coherent detection schemes. , 2009, , .		0
137	Impact of the pulse modulation format on distributed BOTDA sensors based on Simplex coding. Proceedings of SPIE, 2010, , .	0.8	0
138	Distributed optical fiber temperature sensor using only anti-Stokes Raman scattering light in a loop configuration. , 2011, , .		0
139	RAMAN BASED DISTRIBUTED OPTICAL FIBER TEMPERATURE SENSORS: INDUSTRIAL APPLICATIONS AND FUTURE DEVELOPMENTS. , 2013, , 88-113.		0
140	Going beyond limits in Brillouin distributed fibre sensors: Challenges and possible approaches. , 2014, , .		0
141	Distributed birefringence measurements using polarisation correlation in phase-sensitive OTDR. , 2014, , .		0
142	Towards highest spectral efficiency: Optical sinc-shaped Nyquist pulses generation from rectangular frequency comb. , 2014, , .		0
143	Effect of Dispersion Fluctuations on Longitudinal Gain Evolution in Phase-Sensitive Parametric Amplifiers. , 2014, , .		0
144	Differential chirped-pulse pair for sub-meter spatial resolution Brillouin distributed fiber sensing. , 2015, , .		0

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145	Characterisation of an electrical heating method for metallic-coated optical fibres for distributed sensing applications. Proceedings of SPIE, 2016, , .	0.8	0
146	Discrimination of temperature and strain by combined refractive index and birefringence measurements using coherent Rayleigh sensing. , 2017, , .		0
147	Closed-loop Controlled Brillouin Optical Time-Domain Analysis. , 2017, , .		0
148	All-optical flip-flop based on dynamic Brillouin gratings. , 2017, , .		0
149	Design rules for Unipolar Unicolor Coded Brillouin Optical Time Domain Analysis. , 2018, , .		0
150	High-Performance Optical Fibre Sensing. , 2018, , .		0
151	Distributed Acoustic Impedance Measurement Based On Forward Stimulated Brillouin Scattering. , 2018, , .		0
152	Study on Hole-Wall Temperature Measurements During Drilling of Carbon Fiber Composites. Mechanisms and Machine Science, 2021, , 653-658.	0.5	0
153	Enhanced-performance BOTDA sensing through optimized pulse coding and low-RIN bidirectional Raman amplification. , 2012, , .		0
154	Hybrid Raman/FBG-based Sensing for Simultaneous Point Dynamic Strain and Distributed Temperature Measurement. , 2012, , .		0
155	Advanced Pulse Coding Techniques for Distributed Optical Fiber Sensors. , 2013, , .		0
156	Overcoming high-resolution limitations in optimized long-range BOTDA sensors. , 2016, , .		0
157	Novel Concepts and Recent Progress in Distributed Optical Fiber Sensing. , 2016, , .		0
158	High-Resolution Distributed Differential Curvature Measurement Based on Phase-Sensitive Optical Time Domain Reflectometry and Multi-Core Fiber. , 2018, , .		0
159	Characterization of dynamic strain induced by drilling carbon fiber reinforced polymers using optical frequency-domain reflectometry. , 2018, , .		0
160	Distributed Raman Sensing. , 2019, , 1609-1662.		0
161	Guest Editorial JLT Special Issue on OFS-26. Journal of Lightwave Technology, 2019, 37, 4455-4455.	4.6	0
162	Genetic-Optimized Pulse Coding Technique for Brillouin Distributed Optical Fiber Sensing. , 2021, , .		0

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163	Reducing Microbending Losses in Glass Fiber-Packaged Fiber Bragg Grating Sensors for Wind Blades Monitoring. , 2021, , .		0