

# Joel B Harley

## List of Publications by Year in descending order

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Version: 2024-02-01

109  
papers

1,286  
citations

516561

16  
h-index

434063

31  
g-index

110  
all docs

110  
docs citations

110  
times ranked

801  
citing authors

#	ARTICLE	IF	CITATIONS
1	Long-term guided wave structural health monitoring in an uncontrolled environment through long short-term principal component analysis. <i>Structural Health Monitoring</i> , 2022, 21, 1501-1517.	4.3	8
2	Quantifying the Environmental Sensitivity of SSTDR Signals for Monitoring PV Strings. <i>IEEE Journal of Photovoltaics</i> , 2022, 12, 381-387.	1.5	2
3	Anomaly Detection of Disconnects Using SSTDR and Variational Autoencoders. <i>IEEE Sensors Journal</i> , 2022, 22, 3484-3492.	2.4	4
4	Sim-to-real localization: Environment resilient deep ensemble learning for guided wave damage localization. <i>Journal of the Acoustical Society of America</i> , 2022, 151, 1325-1336.	0.5	4
5	Closing the Sim-to-Real Gap in Guided Wave Damage Detection with Adversarial Training of Variational Auto-Encoders. , 2022, , .		3
6	Calculating the grain boundary inclination of voxelated grain structures using a smoothing algorithm. <i>Scripta Materialia</i> , 2022, 218, 114796.	2.6	3
7	Efficient storage and processing of large guided wave data sets with random projections. <i>Structural Health Monitoring</i> , 2021, 20, 2513-2524.	4.3	4
8	Spread Spectrum Time Domain Reflectometry With Lumped Elements on Asymmetric Transmission Lines. <i>IEEE Sensors Journal</i> , 2021, 21, 921-929.	2.4	16
9	Physiology-Informed Real-Time Mean Arterial Blood Pressure Learning and Prediction for Septic Patients Receiving Norepinephrine. <i>IEEE Transactions on Biomedical Engineering</i> , 2021, 68, 181-191.	2.5	7
10	Sim-to-Real: Employing ultrasonic guided wave digital surrogates and transfer learning for damage visualization. <i>Ultrasonics</i> , 2021, 111, 106338.	2.1	19
11	Finding Faults in PV Systems: Supervised and Unsupervised Dictionary Learning With SSTDR. <i>IEEE Sensors Journal</i> , 2021, 21, 4855-4865.	2.4	15
12	Detection and Localization of Damaged Photovoltaic Cells and Modules Using Spread Spectrum Time Domain Reflectometry. <i>IEEE Journal of Photovoltaics</i> , 2021, 11, 195-201.	1.5	11
13	Quantifying the Window of Uncertainty for SSTDR Measurements of a Photovoltaic System. <i>IEEE Sensors Journal</i> , 2021, 21, 9890-9899.	2.4	5
14	Detection and Localization of Disconnections in a Large-Scale String of Photovoltaics Using SSTDR. <i>IEEE Journal of Photovoltaics</i> , 2021, 11, 1097-1104.	1.5	7
15	Signals Passing Through Asymmetric Faults in Transmission Lines. <i>IEEE Sensors Journal</i> , 2021, 21, 16134-16140.	2.4	2
16	Scale Transform Signal Processing for Reducing the Effect of Rain on SSTDR Signals. , 2021, , .		0
17	A SSTDR Methodology, Implementations, and Challenges. <i>Sensors</i> , 2021, 21, 5268.	2.1	12
18	Unsupervised azimuth estimation of solar arrays in low-resolution satellite imagery through semantic segmentation and Hough transform. <i>Applied Energy</i> , 2021, 298, 117273.	5.1	8

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19	Classifying muscle parameters with artificial neural networks and simulated lateral pinch data. PLoS ONE, 2021, 16, e0255103.	1.1	2
20	SPREAD SPECTRUM TIME DOMAIN REFLECTOMETRY (SSTD) DIGITAL TWIN SIMULATION OF PHOTOVOLTAIC SYSTEMS FOR FAULT DETECTION AND LOCATION. Progress in Electromagnetics Research B, 2021, 94, 105-126.	0.7	1
21	Detection and Localization of Disconnections in PV Strings Using Spread-Spectrum Time-Domain Reflectometry. IEEE Journal of Photovoltaics, 2020, 10, 236-242.	1.5	19
22	Measurement of Capacitance Using Spread Spectrum Time Domain Reflectometry (SSTD) and Dictionary Matching. IEEE Sensors Journal, 2020, 20, 10102-10109.	2.4	11
23	A Model for SSTD Signal Propagation Through Photovoltaic Strings. IEEE Journal of Photovoltaics, 2020, 10, 1846-1852.	1.5	3
24	REFLECTOMETRY ON ASYMMETRIC TRANSMISSION LINE SYSTEMS. Progress in Electromagnetics Research M, 2020, 89, 121-130.	0.5	5
25	Model-based statistical guided wave damage detection for an aluminum plate. Structural Health Monitoring, 2020, 19, 1937-1950.	4.3	13
26	Spatio-temporal undersampling: Recovering ultrasonic guided wavefields from incomplete data with compressive sensing. Mechanical Systems and Signal Processing, 2020, 140, 106694.	4.4	16
27	An Overview of Spread Spectrum Time Domain Reflectometry Responses to Photovoltaic Faults. IEEE Journal of Photovoltaics, 2020, 10, 844-851.	1.5	25
28	Segmentation of Hidden Delaminations with Pitch-Catch Ultrasonic Testing and Agglomerative Clustering. Journal of Nondestructive Evaluation, 2020, 39, 1.	1.1	6
29	Postprocessing for Improved Accuracy and Resolution of Spread Spectrum Time-Domain Reflectometry. , 2019, 3, 1-4.		19
30	Polar sparse wavenumber analysis for guided wave reconstruction. AIP Conference Proceedings, 2019, , .	0.3	2
31	Transfer learning of ultrasonic guided waves using autoencoders: A preliminary study. AIP Conference Proceedings, 2019, , .	0.3	11
32	Singular Value-based damage statistics for guided wave Structural Health monitoring. AIP Conference Proceedings, 2019, , .	0.3	0
33	Spread spectrum time-domain reflectometry for detecting and locating capacitive impedances. AIP Conference Proceedings, 2019, , .	0.3	5
34	Reduced Rank Least Squares for Real-Time Short Term Estimation of Mean Arterial Blood Pressure in Septic Patients Receiving Norepinephrine. IEEE Journal of Translational Engineering in Health and Medicine, 2019, 7, 1-9.	2.2	2
35	Sparse Wavenumber Recovery and Prediction of Anisotropic Guided Waves in Composites: A Comparative Study. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 1352-1363.	1.7	9
36	Machine learning and NDE: Past, present, and future. AIP Conference Proceedings, 2019, , .	0.3	31

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37	Spread Spectrum Time Domain Reflectometry (SSTDTR) and Dictionary Matching to Measure Capacitance for PV cells. , 2019, , .		3
38	FAST TRANSIENT SIMULATIONS FOR MULTI-SEGMENT TRANSMISSION LINES WITH A GRAPHICAL MODEL. Progress in Electromagnetics Research, 2019, 165, 67-82.	1.6	5
39	Applicability of SSTDTR Analysis of Complex Loads. , 2019, , .		4
40	Wave Physics Informed Dictionary Learning In One Dimension. , 2019, , .		2
41	Signal Propagation Through Piecewise Transmission Lines for Interpretation of Reflectometry in Photovoltaic Systems. IEEE Journal of Photovoltaics, 2019, 9, 506-512.	1.5	14
42	Dynamic Time Warping Temperature Compensation for Guided Wave Structural Health Monitoring. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 851-861.	1.7	37
43	Statistical partial wavefield imaging using Lamb wave signals. Structural Health Monitoring, 2018, 17, 919-935.	4.3	20
44	Overcoming complexities: Damage detection using dictionary learning framework. AIP Conference Proceedings, 2018, , .	0.3	0
45	Statistical evaluation of damage size based on amplitude mapping of damage-induced ultrasonic wavefield. IOP Conference Series: Materials Science and Engineering, 2018, 405, 012006.	0.3	4
46	Characterizing Micro- and Nano-Materials Based on Their Ultrasonic Dispersion Properties: A Feasibility Study. , 2018, , .		1
47	Ultrasonic Evaluation of Segmental Variability in Additively Manufactured Metal Components. , 2018, , .		5
48	Spread Spectrum Time Domain Reflectometry for Complex Impedances: Application to PV Arrays. , 2018, , .		13
49	Flexible, multi-measurement guided wave damage detection under varying temperatures. AIP Conference Proceedings, 2018, , .	0.3	4
50	Baseline-free guided wave damage detection with surrogate data and dictionary learning. Journal of the Acoustical Society of America, 2018, 143, 3807-3818.	0.5	33
51	Structural damage detection using deep learning of ultrasonic guided waves. AIP Conference Proceedings, 2018, , .	0.3	47
52	Statistical lamb wave localization based on extreme value theory. AIP Conference Proceedings, 2018, , .	0.3	1
53	Two-dimensional sparse wavenumber recovery for guided wavefields. AIP Conference Proceedings, 2018, , .	0.3	5
54	Sparse sensor networks for active structural health monitoring using highly integrated CMOS transceivers. , 2018, , .		3

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55	Reconstruction of Lamb wave dispersion curves by sparse representation with continuity constraints. Journal of the Acoustical Society of America, 2017, 141, 749-763.	0.5	22
56	Robust baseline subtraction for ultrasonic full wavefield analysis. AIP Conference Proceedings, 2017, , .	0.3	5
57	Dynamic time warping for temperature compensation in structural health monitoring. AIP Conference Proceedings, 2017, , .	0.3	5
58	Guided wave retrieval from temporally undersampled data. , 2017, , .		0
59	An effect at the source creates ringing in a thick plate. , 2017, , .		0
60	Guided wave retrieval from temporally undersampled data. , 2017, , .		1
61	An effect at the source creates ringing in a thick plate. , 2017, , .		0
62	Managing Complexity, Uncertainty, and Variability in Guided Wave Structural Health Monitoring. SICE Journal of Control Measurement and System Integration, 2017, 10, 325-336.	0.4	5
63	Guided wave structural health monitoring with large data sets. , 2016, , .		1
64	Consolidating guided wave simulations and experimental data: a dictionary learning approach. Proceedings of SPIE, 2016, , .	0.8	3
65	Ultrasonic guided wave detection of scatterers on large clad steel plates. Proceedings of SPIE, 2016, , .	0.8	0
66	Multidimensional guided wave dispersion recovery for locating defects in composite materials. AIP Conference Proceedings, 2016, , .	0.3	1
67	Predictive Guided Wave Models Through Sparse Modal Representations. Proceedings of the IEEE, 2016, 104, 1604-1619.	16.4	26
68	Coherent, data-driven Lamb wave localization under environmental variations. AIP Conference Proceedings, 2015, , .	0.3	1
69	Dispersion curve recovery with orthogonal matching pursuit. Journal of the Acoustical Society of America, 2015, 137, EL1-EL7.	0.5	30
70	Attenuation and phase compensation for guided wave based inspection using a filter approach. , 2015, , .		1
71	Fast imaging in cannula microscope using orthogonal matching pursuit. , 2015, , .		2
72	Robust ultrasonic damage detection under complex environmental conditions using singular value decomposition. Ultrasonics, 2015, 58, 75-86.	2.1	89

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73	Data-driven and calibration-free lamb wave source localization with sparse sensor arrays. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2015, 62, 1516-1529.	1.7	15
74	Ultrasonic detection of the alkali-silica reaction damage in concrete. , 2014, , .		6
75	Data-driven matched field processing for Lamb wave structural health monitoring. Journal of the Acoustical Society of America, 2014, 135, 1231-1244.	0.5	68
76	Alkali-silica reaction (ASR) detection in concrete from frequency dependent ultrasonic attenuation. , 2014, , .		2
77	A robust baseline removal method for guided wave damage localization. Proceedings of SPIE, 2014, , .	0.8	4
78	Matched field processing localization with random sensor topologies. , 2014, , .		2
79	ASR damage detection in concrete from ultrasonic methods. Proceedings of SPIE, 2014, , .	0.8	0
80	Ultrasonic scatterer detection in a pipe under operating conditions using singular value decomposition. , 2013, , .		1
81	Toward Data-Driven Structural Health Monitoring: Application of Machine Learning and Signal Processing to Damage Detection. Journal of Computing in Civil Engineering, 2013, 27, 667-680.	2.5	104
82	Delay-and-sum technique for localization of active sources in cylindrical objects. AIP Conference Proceedings, 2013, , .	0.3	1
83	Sparse recovery of the multimodal and dispersive characteristics of Lamb waves. Journal of the Acoustical Society of America, 2013, 133, 2732-2745.	0.5	128
84	Multiresolution classification with semi-supervised learning for indirect bridge structural health monitoring. , 2013, , .		9
85	Decomposition of multipath Lamb waves with sparse wavenumber analysis for structural health monitoring. , 2013, , .		0
86	Broadband localization in a dispersive medium through sparse wavenumber analysis. , 2013, , .		12
87	Damage Detection in Pipes under Changing Environmental Conditions Using Embedded Piezoelectric Transducers and Pattern Recognition Techniques. Journal of Pipeline Systems Engineering and Practice, 2013, 4, 17-23.	0.9	15
88	Singular value decomposition for novelty detection in ultrasonic pipe monitoring. Proceedings of SPIE, 2013, , .	0.8	6
89	Ultrasonic Monitoring of a Pressurized Pipe in Operation. , 2013, , .		4
90	Application of Mellin transform features for robust ultrasonic guided wave structural health monitoring. AIP Conference Proceedings, 2012, , .	0.3	14

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91	Robust change detection in highly dynamic guided wave signals with singular value decomposition. , 2012, , .		10
92	Maximum likelihood defect localization in a pipe using guided acoustic waves. , 2012, , .		0
93	Accurate sparse recovery of guided wave characteristics for structural health monitoring. , 2012, , .		9
94	Compressed sensing radar surveillance networks. , 2012, , .		2
95	Scale transform signal processing for optimal ultrasonic temperature compensation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 2226-36.	1.7	92
96	Ultrasonic monitoring of a pipe under operating conditions. Proceedings of SPIE, 2012, , .	0.8	9
97	Applications of Machine Learning in Pipeline Monitoring. , 2011, , .		9
98	Guided wave temperature compensation with the scale-invariant correlation coefficient. , 2011, , .		6
99	Detection of targets embedded in multipath clutter with Time Reversal. , 2011, , .		3
100	Cognitive sensor networks for structure defect monitoring and classification using guided wave signals. , 2010, , .		2
101	Time Reversal Focusing for Pipeline Structural Health Monitoring. Proceedings of Meetings on Acoustics, 2010, , .	0.3	5
102	Single antenna time reversal detection of moving target. , 2010, , .		18
103	Time reversal for damage detection in pipes. , 2010, , .		6
104	Time reversal beamforming of guided waves in pipes with a single defect. , 2010, , .		5
105	Single Antenna Time Reversal of Guided Waves in Pipelines. Proceedings of Meetings on Acoustics, 2009, , .	0.3	2
106	Detection of structural defects in pipes using time reversal of guided waves. , 2009, , .		10
107	2-dimensional Integrated VCSEL and PIN Photodetector Arrays for Bidirectional Optical Links. , 2006, , .		0
108	Acoustic Emission Based Damage Characterization in Composite Plates Using Low-velocity Impact Testing. , 0, , .		2

#	ARTICLE	IF	CITATIONS
109	Learning Guided Wave Dispersion Curves from Multi-Path Reflections with Compressive Sensing. , 0, , .		2