

Joel B Harley

List of Publications by Year in descending order

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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	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
2	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
3	Scale transform signal processing for optimal ultrasonic temperature compensation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 2226-36.	1.7	92
4	Robust ultrasonic damage detection under complex environmental conditions using singular value decomposition. Ultrasonics, 2015, 58, 75-86.	2.1	89
5	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
6	Structural damage detection using deep learning of ultrasonic guided waves. AIP Conference Proceedings, 2018, , .	0.3	47
7	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
8	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
9	Machine learning and NDE: Past, present, and future. AIP Conference Proceedings, 2019, , .	0.3	31
10	Dispersion curve recovery with orthogonal matching pursuit. Journal of the Acoustical Society of America, 2015, 137, EL1-EL7.	0.5	30
11	Predictive Guided Wave Models Through Sparse Modal Representations. Proceedings of the IEEE, 2016, 104, 1604-1619.	16.4	26
12	An Overview of Spread Spectrum Time Domain Reflectometry Responses to Photovoltaic Faults. IEEE Journal of Photovoltaics, 2020, 10, 844-851.	1.5	25
13	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
14	Statistical partial wavefield imaging using Lamb wave signals. Structural Health Monitoring, 2018, 17, 919-935.	4.3	20
15	Postprocessing for Improved Accuracy and Resolution of Spread Spectrum Time-Domain Reflectometry. , 2019, 3, 1-4.		19
16	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
17	Sim-to-Real: Employing ultrasonic guided wave digital surrogates and transfer learning for damage visualization. Ultrasonics, 2021, 111, 106338.	2.1	19
18	Single antenna time reversal detection of moving target. , 2010, , .		18

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19	Spatio-temporal undersampling: Recovering ultrasonic guided wavefields from incomplete data with compressive sensing. <i>Mechanical Systems and Signal Processing</i> , 2020, 140, 106694.	4.4	16
20	Spread Spectrum Time Domain Reflectometry With Lumped Elements on Asymmetric Transmission Lines. <i>IEEE Sensors Journal</i> , 2021, 21, 921-929.	2.4	16
21	Damage Detection in Pipes under Changing Environmental Conditions Using Embedded Piezoelectric Transducers and Pattern Recognition Techniques. <i>Journal of Pipeline Systems Engineering and Practice</i> , 2013, 4, 17-23.	0.9	15
22	Data-driven and calibration-free lamb wave source localization with sparse sensor arrays. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2015, 62, 1516-1529.	1.7	15
23	Finding Faults in PV Systems: Supervised and Unsupervised Dictionary Learning With SSTDR. <i>IEEE Sensors Journal</i> , 2021, 21, 4855-4865.	2.4	15
24	Application of Mellin transform features for robust ultrasonic guided wave structural health monitoring. <i>AIP Conference Proceedings</i> , 2012, , .	0.3	14
25	Signal Propagation Through Piecewise Transmission Lines for Interpretation of Reflectometry in Photovoltaic Systems. <i>IEEE Journal of Photovoltaics</i> , 2019, 9, 506-512.	1.5	14
26	Spread Spectrum Time Domain Reflectometry for Complex Impedances: Application to PV Arrays. , 2018, , .		13
27	Model-based statistical guided wave damage detection for an aluminum plate. <i>Structural Health Monitoring</i> , 2020, 19, 1937-1950.	4.3	13
28	Broadband localization in a dispersive medium through sparse wavenumber analysis. , 2013, , .		12
29	A SSTDR Methodology, Implementations, and Challenges. <i>Sensors</i> , 2021, 21, 5268.	2.1	12
30	Transfer learning of ultrasonic guided waves using autoencoders: A preliminary study. <i>AIP Conference Proceedings</i> , 2019, , .	0.3	11
31	Measurement of Capacitance Using Spread Spectrum Time Domain Reflectometry (SSTDR) and Dictionary Matching. <i>IEEE Sensors Journal</i> , 2020, 20, 10102-10109.	2.4	11
32	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
33	Detection of structural defects in pipes using time reversal of guided waves. , 2009, , .		10
34	Robust change detection in highly dynamic guided wave signals with singular value decomposition. , 2012, , .		10
35	Applications of Machine Learning in Pipeline Monitoring. , 2011, , .		9
36	Accurate sparse recovery of guided wave characteristics for structural health monitoring. , 2012, , .		9

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37	Ultrasonic monitoring of a pipe under operating conditions. Proceedings of SPIE, 2012, , .	0.8	9
38	Multiresolution classification with semi-supervised learning for indirect bridge structural health monitoring. , 2013, , .		9
39	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
40	Long-term guided wave structural health monitoring in an uncontrolled environment through long short-term principal component analysis. Structural Health Monitoring, 2022, 21, 1501-1517.	4.3	8
41	Unsupervised azimuth estimation of solar arrays in low-resolution satellite imagery through semantic segmentation and Hough transform. Applied Energy, 2021, 298, 117273.	5.1	8
42	Physiology-Informed Real-Time Mean Arterial Blood Pressure Learning and Prediction for Septic Patients Receiving Norepinephrine. IEEE Transactions on Biomedical Engineering, 2021, 68, 181-191.	2.5	7
43	Detection and Localization of Disconnections in a Large-Scale String of Photovoltaics Using SSTDR. IEEE Journal of Photovoltaics, 2021, 11, 1097-1104.	1.5	7
44	Time reversal for damage detection in pipes. , 2010, , .		6
45	Guided wave temperature compensation with the scale-invariant correlation coefficient. , 2011, , .		6
46	Singular value decomposition for novelty detection in ultrasonic pipe monitoring. Proceedings of SPIE, 2013, , .	0.8	6
47	Ultrasonic detection of the alkali-silica reaction damage in concrete. , 2014, , .		6
48	Segmentation of Hidden Delaminations with Pitchâ€“Catch Ultrasonic Testing and Agglomerative Clustering. Journal of Nondestructive Evaluation, 2020, 39, 1.	1.1	6
49	Time Reversal Focusing for Pipeline Structural Health Monitoring. Proceedings of Meetings on Acoustics, 2010, , .	0.3	5
50	Time reversal beamforming of guided waves in pipes with a single defect. , 2010, , .		5
51	Robust baseline subtraction for ultrasonic full wavefield analysis. AIP Conference Proceedings, 2017, , .	0.3	5
52	Dynamic time warping for temperature compensation in structural health monitoring. AIP Conference Proceedings, 2017, , .	0.3	5
53	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
54	Ultrasonic Evaluation of Segmental Variability in Additively Manufactured Metal Components. , 2018, , .		5

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55	Two-dimensional sparse wavenumber recovery for guided wavefields. AIP Conference Proceedings, 2018, , .	0.3	5
56	Spread spectrum time-domain reflectometry for detecting and locating capacitive impedances. AIP Conference Proceedings, 2019, , .	0.3	5
57	FAST TRANSIENT SIMULATIONS FOR MULTI-SEGMENT TRANSMISSION LINES WITH A GRAPHICAL MODEL. Progress in Electromagnetics Research, 2019, 165, 67-82.	1.6	5
58	REFLECTOMETRY ON ASYMMETRIC TRANSMISSION LINE SYSTEMS. Progress in Electromagnetics Research M, 2020, 89, 121-130.	0.5	5
59	Quantifying the Window of Uncertainty for SSTDR Measurements of a Photovoltaic System. IEEE Sensors Journal, 2021, 21, 9890-9899.	2.4	5
60	Ultrasonic Monitoring of a Pressurized Pipe in Operation. , 2013, , .		4
61	A robust baseline removal method for guided wave damage localization. Proceedings of SPIE, 2014, , .	0.8	4
62	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
63	Flexible, multi-measurement guided wave damage detection under varying temperatures. AIP Conference Proceedings, 2018, , .	0.3	4
64	Applicability of SSTDR Analysis of Complex Loads. , 2019, , .		4
65	Efficient storage and processing of large guided wave data sets with random projections. Structural Health Monitoring, 2021, 20, 2513-2524.	4.3	4
66	Anomaly Detection of Disconnects Using SSTDR and Variational Autoencoders. IEEE Sensors Journal, 2022, 22, 3484-3492.	2.4	4
67	Sim-to-real localization: Environment resilient deep ensemble learning for guided wave damage localization. Journal of the Acoustical Society of America, 2022, 151, 1325-1336.	0.5	4
68	Detection of targets embedded in multipath clutter with Time Reversal. , 2011, , .		3
69	Consolidating guided wave simulations and experimental data: a dictionary learning approach. Proceedings of SPIE, 2016, , .	0.8	3
70	Spread Spectrum Time Domain Reflectometry (SSTDR) and Dictionary Matching to Measure Capacitance for PV cells. , 2019, , .		3
71	A Model for SSTDR Signal Propagation Through Photovoltaic Strings. IEEE Journal of Photovoltaics, 2020, 10, 1846-1852.	1.5	3
72	Sparse sensor networks for active structural health monitoring using highly integrated CMOS transceivers. , 2018, , .		3

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73	Closing the Sim-to-Real Gap in Guided Wave Damage Detection with Adversarial Training of Variational Auto-Encoders. , 2022, , .		3
74	Calculating the grain boundary inclination of voxelated grain structures using a smoothing algorithm. Scripta Materialia, 2022, 218, 114796.	2.6	3
75	Single Antenna Time Reversal of Guided Waves in Pipelines. Proceedings of Meetings on Acoustics, 2009, , .	0.3	2
76	Cognitive sensor networks for structure defect monitoring and classification using guided wave signals. , 2010, , .		2
77	Compressed sensing radar surveillance networks. , 2012, , .		2
78	Alkali-silica reaction (ASR) detection in concrete from frequency dependent ultrasonic attenuation. , 2014, , .		2
79	Matched field processing localization with random sensor topologies. , 2014, , .		2
80	Fast imaging in cannula microscope using orthogonal matching pursuit. , 2015, , .		2
81	Polar sparse wavenumber analysis for guided wave reconstruction. AIP Conference Proceedings, 2019, , .	0.3	2
82	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
83	Wave Physics Informed Dictionary Learning In One Dimension. , 2019, , .		2
84	Signals Passing Through Asymmetric Faults in Transmission Lines. IEEE Sensors Journal, 2021, 21, 16134-16140.	2.4	2
85	Classifying muscle parameters with artificial neural networks and simulated lateral pinch data. PLoS ONE, 2021, 16, e0255103.	1.1	2
86	Acoustic Emission Based Damage Characterization in Composite Plates Using Low-velocity Impact Testing. , 0, , .		2
87	Learning Guided Wave Dispersion Curves from Multi-Path Reflections with Compressive Sensing. , 0, , .		2
88	Quantifying the Environmental Sensitivity of SSTDR Signals for Monitoring PV Strings. IEEE Journal of Photovoltaics, 2022, 12, 381-387.	1.5	2
89	Ultrasonic scatterer detection in a pipe under operating conditions using singular value decomposition. , 2013, , .		1
90	Delay-and-sum technique for localization of active sources in cylindrical objects. AIP Conference Proceedings, 2013, , .	0.3	1

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91	Coherent, data-driven Lamb wave localization under environmental variations. AIP Conference Proceedings, 2015, , .	0.3	1
92	Attenuation and phase compensation for guided wave based inspection using a filter approach. , 2015, , .		1
93	Guided wave structural health monitoring with large data sets. , 2016, , .		1
94	Multidimensional guided wave dispersion recovery for locating defects in composite materials. AIP Conference Proceedings, 2016, , .	0.3	1
95	Guided wave retrieval from temporally undersampled data. , 2017, , .		1
96	Characterizing Micro- and Nano-Materials Based on Their Ultrasonic Dispersion Properties: A Feasibility Study. , 2018, , .		1
97	Statistical lamb wave localization based on extreme value theory. AIP Conference Proceedings, 2018, , .	0.3	1
98	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
99	2-dimensional Integrated VCSEL and PIN Photodector Arrays for Bidirectional Optical Links. , 2006, , .		0
100	Maximum likelihood defect localization in a pipe using guided acoustic waves. , 2012, , .		0
101	Decomposition of multipath Lamb waves with sparse wavenumber analysis for structural health monitoring. , 2013, , .		0
102	ASR damage detection in concrete from ultrasonic methods. Proceedings of SPIE, 2014, , .	0.8	0
103	Ultrasonic guided wave detection of scatterers on large clad steel plates. Proceedings of SPIE, 2016, , .	0.8	0
104	Guided wave retrieval from temporally undersampled data. , 2017, , .		0
105	An effect at the source creates ringing in a thick plate. , 2017, , .		0
106	An effect at the source creates ringing in a thick plate. , 2017, , .		0
107	Overcoming complexities: Damage detection using dictionary learning framework. AIP Conference Proceedings, 2018, , .	0.3	0
108	Singular Value-based damage statistics for guided wave Structural Health monitoring. AIP Conference Proceedings, 2019, , .	0.3	0

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109	Scale Transform Signal Processing for Reducing the Effect of Rain on SSTDR Signals. , 2021, , .		0