

Matthew S Allen

List of Publications by Year in descending order

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Version: 2024-02-01

98
papers

1,877
citations

279798

23
h-index

289244

40
g-index

105
all docs

105
docs citations

105
times ranked

729
citing authors

#	ARTICLE	IF	CITATIONS
1	Nonlinear Normal Mode backbone estimation with near-resonant steady state inputs. Mechanical Systems and Signal Processing, 2022, 162, 108046.	8.0	7
2	Observations of modal coupling due to bolted joints in an experimental benchmark structure. Mechanical Systems and Signal Processing, 2022, 162, 107968.	8.0	8
3	Investigation of Transmission Simulator-Based Response Reconstruction Accuracy. Conference Proceedings of the Society for Experimental Mechanics, 2022, , 65-76.	0.5	3
4	Extension of the Harmonic Balance Method for dynamic systems with Iwan joints. Mechanical Systems and Signal Processing, 2022, 166, 108434.	8.0	6
5	Nonlinear Variability due to Mode Coupling in a Bolted Benchmark Structure. Conference Proceedings of the Society for Experimental Mechanics, 2022, , 15-18.	0.5	0
6	Experimental Dynamic Substructures. , 2022, , 1063-1091.		0
7	Adapting a contact-mechanics algorithm to predict damping in bolted joints using quasi-static modal analysis. International Journal of Mechanical Sciences, 2021, 189, 105982.	6.7	17
8	Nonlinear substructuring in the modal domain: numerical validation and experimental verification in presence of localized nonlinearities. Nonlinear Dynamics, 2021, 104, 1043-1067.	5.2	6
9	Quasi-static modal analysis for reduced order modeling of geometrically nonlinear structures. Journal of Sound and Vibration, 2021, 502, 116076.	3.9	11
10	Towards an Understanding of the Transient Behavior of the Five-Parameter Iwan-Type Model. Conference Proceedings of the Society for Experimental Mechanics, 2021, , 117-120.	0.5	0
11	Tuning of Finite Element Model Parameters to Match Nonlinear Reduced Order Models. Conference Proceedings of the Society for Experimental Mechanics, 2021, , 113-116.	0.5	0
12	Transmission Simulator Based MIMO Response Reconstruction for Vehicle Subcomponents. Conference Proceedings of the Society for Experimental Mechanics, 2021, , 189-195.	0.5	4
13	Substructuring in Engineering Dynamics. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2020, , .	0.6	40
14	Model Reduction Concepts and Substructuring Approaches for Linear Systems. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2020, , 25-73.	0.6	1
15	Experimental Substructuring. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2020, , 75-181.	0.6	0
16	Weakly Nonlinear Systems: Modeling and Experimental Methods. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2020, , 269-277.	0.6	1
17	Spider Configurations for Models with Discrete Iwan Elements. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 25-38.	0.5	0
18	Predicting S4 Beam Joint Nonlinearity Using Quasi-Static Modal Analysis. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 39-51.	0.5	7

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19	Updating Geometrically Nonlinear Reduced-Order Models Using Nonlinear Modes and Harmonic Balance. <i>AIAA Journal</i> , 2020, 58, 3553-3568.	2.6	15
20	Application of quasi-static modal analysis to a finite element model and experimental correlation. <i>Journal of Sound and Vibration</i> , 2020, 479, 115376.	3.9	18
21	Experimental Dynamic Substructures. , 2020, , 1-29.		0
22	Experimental Characterization of a New Benchmark Structure for Prediction of Damping Nonlinearity. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2019, , 57-78.	0.5	6
23	Computing Nonlinear Normal Modes of Aerospace Structures Using the Multi-harmonic Balance Method. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2019, , 247-259.	0.5	1
24	Interface reduction for Hurty/Craig-Bampton substructured models: Review and improvements. <i>Mechanical Systems and Signal Processing</i> , 2019, 114, 579-603.	8.0	67
25	Updating structural models containing nonlinear Iwan joints using quasi-static modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2019, 118, 133-157.	8.0	56
26	Using Nonlinear Normal Modes to Optimize the Design of Geometrically Nonlinear Structures. , 2019, , .		0
27	System Identification to Estimate the Nonlinear Modes of a Gong. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2019, , 121-136.	0.5	1
28	Modal Iwan Models for Structures with Bolted Joints. , 2018, , 255-278.		1
29	A Comparison of Reduced Order Modeling Techniques Used in Dynamic Substructuring. , 2018, , 465-489.		0
30	Full-field linear and nonlinear measurements using Continuous-Scan Laser Doppler Vibrometry and high speed Three-Dimensional Digital Image Correlation. <i>Mechanical Systems and Signal Processing</i> , 2017, 86, 82-97.	8.0	73
31	Nonlinear characterization of a bolted, industrial structure using a modal framework. <i>Mechanical Systems and Signal Processing</i> , 2017, 84, 152-170.	8.0	57
32	Finite element model calibration of a nonlinear perforated plate. <i>Journal of Sound and Vibration</i> , 2017, 392, 280-294.	3.9	19
33	Nonlinear Normal Modes of a Curved Beam and Its Response to Random Loading. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2017, , 115-126.	0.5	1
34	Substructuring of a Nonlinear Beam Using a Modal Iwan Framework, Part I: Nonlinear Modal Model Identification. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2017, , 165-178.	0.5	7
35	Modal Substructuring of Geometrically Nonlinear Finite Element Models with Interface Reduction. <i>AIAA Journal</i> , 2017, 55, 1695-1706.	2.6	33
36	A numerical study on the limitations of modal Iwan models for impulsive excitations. <i>Journal of Sound and Vibration</i> , 2017, 390, 118-140.	3.9	29

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37	Relationships between nonlinear normal modes and response to random inputs. <i>Mechanical Systems and Signal Processing</i> , 2017, 84, 184-199.	8.0	9
38	Visuomotor Entrainment and the Frequency-Dependent Response of Walking Balance to Perturbations. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2017, 25, 1135-1142.	4.9	28
39	Substructuring of a Nonlinear Beam Using a Modal Iwan Framework, Part II: Nonlinear Modal Substructuring. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2017, , 179-197.	0.5	4
40	Effect of Far-Field Structure on Joint Properties. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2017, , 63-77.	0.5	6
41	Predicting Damping of a Cantilever Beam With a Bolted Joint Using Quasi-Static Modal Analysis. , 2017, , .		5
42	The Measurement of a Nonlinear Resonant Decay Using Continuous-Scan Laser Doppler Vibrometry. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2017, , 97-104.	0.5	0
43	Measurement of nonlinear normal modes using multi-harmonic stepped force appropriation and free decay. <i>Mechanical Systems and Signal Processing</i> , 2016, 76-77, 612-633.	8.0	40
44	Modal Substructuring of Geometrically Nonlinear Finite-Element Models. <i>AIAA Journal</i> , 2016, 54, 691-702.	2.6	33
45	Measurement of Nonlinear Normal Modes Using Mono-harmonic Force Appropriation: Experimental Investigation. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2016, , 241-254.	0.5	2
46	Using NNMs to Evaluate Reduced Order Models of Curved Beam. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2016, , 457-469.	0.5	3
47	Modal Test and Parameter Updating of Metal Laser Sintered Components. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2016, , 223-233.	0.5	0
48	Experimental Dynamic Characterization of Operating Wind Turbines with Anisotropic Rotor. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2016, , 131-143.	0.5	0
49	Nonlinear Reduced Order Modeling of a Curved Axi-Symmetric Perforated Plate: Comparison with Experiments. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2016, , 437-445.	0.5	0
50	Nonlinear Normal Modes in Finite Element Model Validation of Geometrically Nonlinear Flat and Curved Beams. , 2015, , .		4
51	Application of Viscous and Iwan Modal Damping Models to Experimental Measurements From Bolted Structures. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2015, 137, .	1.6	63
52	Advanced age brings a greater reliance on visual feedback to maintain balance during walking. <i>Human Movement Science</i> , 2015, 40, 381-392.	1.4	88
53	Evaluation of Geometrically Nonlinear Reduced-Order Models with Nonlinear Normal Modes. <i>AIAA Journal</i> , 2015, 53, 3273-3285.	2.6	82
54	Nonlinear Model Updating of a Cantilevered Plate and a Stiffened Skin Panel from a Lynx Helicopter. , 2015, , .		1

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55	Linear and Nonlinear Response of a Rectangular Plate Measured with Continuous-Scan Laser Doppler Vibrometry and 3D-Digital Image Correlation. Conference Proceedings of the Society for Experimental Mechanics, 2015, , 251-263.	0.5	0
56	Relationships between Nonlinear Normal Modes and Response to Random Inputs. , 2014, , .		6
57	Substructuring with Nonlinear Reduced Order Models and Interface Reduction with Characteristic Constraint Modes. , 2014, , .		7
58	A Review of Signal Processing Techniques for Continuous-Scan Laser Doppler Vibrometry. , 2014, , .		0
59	Feasibility of Describing Joint Nonlinearity in Exhaust Components With Modal Iwan Models. , 2014, , .		5
60	Harmonic Transfer Function to Measure Translational and Rotational Velocities With Continuous-Scan Laser Doppler Vibrometry. Journal of Vibration and Acoustics, Transactions of the ASME, 2014, 136, .	1.6	12
61	A numerical approach to directly compute nonlinear normal modes of geometrically nonlinear finite element models. Mechanical Systems and Signal Processing, 2014, 46, 1-15.	8.0	62
62	Lifting approach to simplify output-only continuous-scan laser vibrometry. Mechanical Systems and Signal Processing, 2014, 45, 267-282.	8.0	24
63	Investigation of the effectiveness of using an experiment to validate experimental substructure models. Mechanical Systems and Signal Processing, 2014, 43, 192-216.	8.0	4
64	Identifying parameters of multi-degree-of-freedom nonlinear structural dynamic systems using linear time periodic approximations. Mechanical Systems and Signal Processing, 2014, 46, 325-343.	8.0	10
65	Investigation of Modal Iwan Models for Structures with Bolted Joints. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 9-25.	0.5	9
66	Craig-Bampton Substructuring for Geometrically Nonlinear Subcomponents. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 167-178.	0.5	10
67	Mode Shape Comparison Using Continuous-Scan Laser Doppler Vibrometry and High Speed 3D Digital Image Correlation. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 321-331.	0.5	9
68	Transfer Functions to Measure Translational and Rotational Velocities with Continuous-Scan Laser Doppler Vibrometry. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 597-615.	0.5	1
69	Nonlinear Modal Substructuring of Systems with Geometric Nonlinearities. , 2013, , .		20
70	Investigating Cases of Jump Phenomenon in a Nonlinear Oscillatory System. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 299-318.	0.5	12
71	Instantaneous Center Manifolds and Nonlinear Modes of Vibration. , 2012, , .		6
72	Computing Nonlinear Normal Modes Using Numerical Continuation and Force Appropriation. , 2012, , .		13

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73	Two Algorithms for Mass Normalizing Mode Shapes From Impact Excited Continuous-Scan Laser Doppler Vibrometry. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2012, 134, .	1.6	15
74	Output-only Modal Analysis using Continuous-Scan Laser Doppler Vibrometry and application to a 20kW wind turbine. <i>Mechanical Systems and Signal Processing</i> , 2012, 31, 228-245.	8.0	60
75	Metrics for diagnosing negative mass and stiffness when uncoupling experimental and analytical substructures. <i>Journal of Sound and Vibration</i> , 2012, 331, 5435-5448.	3.9	18
76	Investigation Into the Effect of Mode Shape Errors on Validation Experiments for Experimental-Analytical Substructuring. , 2012, , .		3
77	Identifying the Modal Properties of Nonlinear Structures Using Measured Free Response Time Histories from a Scanning Laser Doppler Vibrometer. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2012, , 269-286.	0.5	18
78	Substructuring with Nonlinear Subcomponents: A Nonlinear Normal Mode Perspective. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2012, , 109-121.	0.5	5
79	Method for identifying models of nonlinear systems using linear time periodic approximations. <i>Mechanical Systems and Signal Processing</i> , 2011, 25, 2705-2721.	8.0	22
80	Experimental modal substructuring to estimate fixed-base modes from tests on a flexible fixture. <i>Journal of Sound and Vibration</i> , 2011, 330, 4413-4428.	3.9	25
81	Output-only modal analysis of linear time-periodic systems with application to wind turbine simulation data. <i>Mechanical Systems and Signal Processing</i> , 2011, 25, 1174-1191.	8.0	92
82	Numerical Continuation of Periodic Orbits for Harmonically Forced Nonlinear Systems. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2011, , 51-69.	0.5	10
83	Output-Only Modal Analysis Using Continuous-Scan Laser Doppler Vibrometry and Application to a 20kW Wind Turbine. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2011, , 47-64.	0.5	8
84	Output-Only Modal Analysis of Linear Time Periodic Systems with Application to Wind Turbine Simulation Data. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2011, , 361-374.	0.5	56
85	Experimental Modal Substructuring to Extract Fixed-Base Modes from a Substructure Attached to a Flexible Fixture. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2011, , 1085-1099.	0.5	4
86	Identifying parameters of nonlinear structural dynamic systems using linear time-periodic approximations. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2011, , 103-126.	0.5	2
87	Experimental modal substructuring to couple and uncouple substructures with flexible fixtures and multi-point connections. <i>Journal of Sound and Vibration</i> , 2010, 329, 4891-4906.	3.9	124
88	A new method for processing impact excited continuous-scan laser Doppler vibrometer measurements. <i>Mechanical Systems and Signal Processing</i> , 2010, 24, 721-735.	8.0	93
89	Estimating the degree of nonlinearity in transient responses with zeroed early-time fast Fourier transforms. <i>Mechanical Systems and Signal Processing</i> , 2010, 24, 2049-2064.	8.0	20
90	Experimental Modal Analysis on a Rotating Fan Using Tracking-CSLDV. <i>AIP Conference Proceedings</i> , 2010, , .	0.4	19

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91	System Identification of Dynamic Systems With Cubic Nonlinearities Using Linear Time-Periodic Approximations. , 2009, , .		6
92	Frequency-Domain Identification of Linear Time-Periodic Systems Using LTI Techniques. Journal of Computational and Nonlinear Dynamics, 2009, 4, .	1.2	44
93	Piecewise-linear restoring force surfaces for semi-nonparametric identification of nonlinear systems. Nonlinear Dynamics, 2008, 54, 123-135.	5.2	21
94	Delayed, multi-step inverse structural filter for robust force identification. Mechanical Systems and Signal Processing, 2008, 22, 1036-1054.	8.0	38
95	Structural Modal Analysis for Detecting Open Solder Bumps on Flip Chips. IEEE Transactions on Advanced Packaging, 2008, 31, 118-126.	1.6	7
96	Mass normalized mode shapes using impact excitation and continuous-scan laser Doppler vibrometry. Proceedings of SPIE, 2008, , .	0.8	10
97	Floquet Experimental Modal Analysis for System Identification of Linear Time-Periodic Systems. , 2007, , .		10
98	A global, single-inputâ€“multi-output (SIMO) implementation of the algorithm of mode isolation and application to analytical and experimental data. Mechanical Systems and Signal Processing, 2006, 20, 1090-1111.	8.0	63