

Matthew R W Brake

List of Publications by Year in descending order

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Version: 2024-02-01

101
papers

1,395
citations

430874

18
h-index

395702

33
g-index

122
all docs

122
docs citations

122
times ranked

635
citing authors

#	ARTICLE	IF	CITATIONS
1	Measurement and identification of the nonlinear dynamics of a jointed structure using full-field data, Part I: Measurement of nonlinear dynamics. Mechanical Systems and Signal Processing, 2022, 166, 108401.	8.0	20
2	Measurement and identification of the nonlinear dynamics of a jointed structure using full-field data; Part II - Nonlinear system identification. Mechanical Systems and Signal Processing, 2022, 166, 108402.	8.0	17
3	A quantitative assessment of the model form error of friction models across different interface representations for jointed structures. Mechanical Systems and Signal Processing, 2022, 163, 108163.	8.0	6
4	Characterizing the Fatigue Behavior of Wrought Fe-2V Using Experimental Techniques. Journal of Engineering Materials and Technology, Transactions of the ASME, 2022, 144, .	1.4	2
5	Reduced order modeling for the dynamics of jointed structures through hyper-reduced interface representation. Mechanical Systems and Signal Processing, 2021, 149, 107249.	8.0	7
6	Estimation of impact forces during multi-point collisions involving small deformations. Multibody System Dynamics, 2021, 51, 45-90.	2.7	4
7	Nonlinear System Identification of a Jointed Structure Using Full-Field Data: Part II Analysis. Conference Proceedings of the Society for Experimental Mechanics, 2021, , 185-188.	0.5	1
8	An Assessment of the Applicability and Epistemic Uncertainties Inherent to Different Classes of Friction Models for Modeling Bolted Interfaces. Conference Proceedings of the Society for Experimental Mechanics, 2021, , 291-294.	0.5	0
9	Testing Summary for the Box Assembly with Removable Component Structure. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 167-177.	0.5	6
10	Gerrymandering for Interfaces: Modeling the Mechanics of Jointed Structures. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 81-85.	0.5	4
11	On the Modal Surrogacy of Joint Parameter Estimates in Bolted Joints. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 137-140.	0.5	0
12	A Priori Methods to Assess the Strength of Nonlinearities for Design Applications. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 243-246.	0.5	0
13	Numerical Assessment of Polynomial Nonlinear State-Space and Nonlinear-Mode Models for Near-Resonant Vibrations. Vibration, 2020, 3, 320-342.	1.9	2
14	Strain Hardening From Elastic-Perfectly Plastic to Perfectly Elastic Indentation Single Asperity Contact. Frontiers in Mechanical Engineering, 2020, 6, .	1.8	10
15	Traction-based multi-scale nonlinear dynamic modeling of bolted joints: Formulation, application, and trends in micro-scale interface evolution. Mechanical Systems and Signal Processing, 2020, 139, 106615.	8.0	37
16	A quasi-static non-linear modal analysis procedure extending Rayleigh quotient stationarity for non-conservative dynamical systems. Computers and Structures, 2020, 230, 106184.	4.4	17
17	Experimental assessment of polynomial nonlinear state-space and nonlinear-mode models for near-resonant vibrations. Mechanical Systems and Signal Processing, 2020, 143, 106796.	8.0	12
18	On the Characterization of Nonlinearities in Assembled Structures. Journal of Vibration and Acoustics, Transactions of the ASME, 2020, 142, .	1.6	11

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19	Identification of Instantaneous Frequency and Damping From Transient Decay Data. Journal of Vibration and Acoustics, Transactions of the ASME, 2020, 142, .	1.6	14
20	Experimental Investigation of Local Dynamics in a Bolted Lap Joint Using Digital Image Correlation. Journal of Vibration and Acoustics, Transactions of the ASME, 2020, 142, .	1.6	7
21	A Review of Damping Models for Structures With Mechanical Joints1. Applied Mechanics Reviews, 2020, 72, .	10.1	54
22	Nonlinear modeling of structures with bolted joints: A comparison of two approaches based on a time-domain and frequency-domain solver. Mechanical Systems and Signal Processing, 2019, 114, 413-438.	8.0	110
23	Interface reduction for Hurty/Craig-Bampton substructured models: Review and improvements. Mechanical Systems and Signal Processing, 2019, 114, 579-603.	8.0	67
24	In Situ Measurements of Interfacial Contact Pressure During Impact Hammer Tests. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 225-236.	0.5	9
25	The failure mechanisms of fasteners under multi-axial loading. Engineering Failure Analysis, 2019, 105, 708-726.	4.0	6
26	Measurement of slip and separation in jointed structures with non-flat interfaces. Mechanical Systems and Signal Processing, 2019, 134, 106325.	8.0	24
27	The impact of fretting wear on structural dynamics: Experiment and Simulation. Tribology International, 2019, 138, 111-124.	5.9	65
28	Observations of variability and repeatability in jointed structures. Mechanical Systems and Signal Processing, 2019, 129, 282-307.	8.0	47
29	Comparison of nonlinear system identification methods for free decay measurements with application to jointed structures. Journal of Sound and Vibration, 2019, 453, 268-293.	3.9	31
30	The surrogate system hypothesis for joint mechanics. Mechanical Systems and Signal Processing, 2019, 126, 42-64.	8.0	22
31	Strain Hardening From Elasticâ€œPerfectly Plastic to Perfectly Elastic Flattening Single Asperity Contact. Journal of Tribology, 2019, 141, .	1.9	16
32	System Identification of Jointed Structures: Nonlinear Modal Testing Vs. State-Space Model Identification. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 159-161.	0.5	1
33	The Effect of Non-Flat Interfaces On System Dynamics. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 187-197.	0.5	1
34	An Overview of Constitutive Models. , 2018, , 207-221.		3
35	A Standard Practice for Modeling Bolted Joints in a Finite Element Package. , 2018, , 415-426.		0
36	Reduced Order Modeling of Nonlinear Structures with Frictional Interfaces. , 2018, , 427-450.		2

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37	Round Robin Systems. , 2018, , 45-58.		1
38	Constitutive Modeling of Contact for Elastic-Plastic Materials Engaged in Micro/Macroslip. , 2018, , 279-329.		0
39	Introduction to Research on the Mechanics of Jointed Structures. , 2018, , 3-10.		3
40	The Reduced Iwan Plus Pinning Joint Model. , 2018, , 231-253.		0
41	A Comparison of Reduced Order Modeling Techniques Used in Dynamic Substructuring. , 2018, , 465-489.		0
42	Numerical Methods for Assessing Response Metrics. , 2018, , 539-560.		0
43	Quantifying Epistemic and Aleatoric Uncertainty in the Ampair 600 Wind Turbine. , 2018, , 651-672.		1
44	Parameter Estimation via Instantaneous Frequency and Damping from Transient Ring-Down Data. , 2018, , 381-393.		0
45	Considerations for Measurements of Jointed Structures. , 2018, , 109-133.		0
46	Epistemic and Aleatoric Uncertainty in Modeling. , 2018, , 593-603.		0
47	Historical Perspective on Numerical Techniques for Modeling Joints. , 2018, , 397-413.		0
48	Predicting the Shakedown Limits of Joints Subject to Fretting and High Cycle Fatigue. , 2018, , 561-582.		0
49	A Primer for Uncertainty Modeling in Jointed Structures. , 2018, , 585-592.		0
50	A Practical Application of a Maximum Entropy, Non-parametric Approach to Account for Epistemic Uncertainty Using Random Matrices. , 2018, , 605-626.		0
51	Modeling and Measurement of a Tunable Acoustoelastic System. Sound and Vibration, 2018, 52, 1-6.	0.3	3
52	On the origin of computational model sensitivity, error, and uncertainty in threaded fasteners. Computers and Structures, 2017, 186, 1-10.	4.4	16
53	Comparison of Nonlinear System Identification Methods for Free Decay Measurements with Application to MEMS Devices. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 29-46.	0.5	5
54	Designing energy dissipation properties via thermal spray coatings. Surface and Coatings Technology, 2017, 310, 70-78.	4.8	5

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55	A Comprehensive Set of Impact Data for Common Aerospace Metals. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	1.2	8
56	A reduced Iwan model that includes pinning for bolted joint mechanics. Nonlinear Dynamics, 2017, 87, 1335-1349.	5.2	56
57	Predicting a contact's sensitivity to initial conditions using metrics of frictional coupling. Tribology International, 2017, 108, 95-110.	5.9	9
58	Sensing and Rating of Vehicleâ€“Railroad Bridge Collision. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 227-234.	0.5	2
59	In Situ Measurements of Contact Pressure for Jointed Interfaces During Dynamic Loading Experiments. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 133-141.	0.5	8
60	Experimental Assessment of the Influence of Interface Geometries on Structural Dynamic Response. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 255-261.	0.5	18
61	Effect of Far-Field Structure on Joint Properties. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 63-77.	0.5	6
62	Structural Design with Joints for Maximum Dissipation. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 179-187.	0.5	2
63	Parameterized reduced order models from a single mesh using hyper-dual numbers. Journal of Sound and Vibration, 2016, 371, 370-392.	3.9	8
64	The Effects of Boundary Conditions, Measurement Techniques, and Excitation Type on Measurements of the Properties of Mechanical Joints. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 415-431.	0.5	15
65	A Numerical Round Robin for the Prediction of the Dynamics of Jointed Structures. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 195-211.	0.5	8
66	Experimental Determination of Frictional Interface Models. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 473-490.	0.5	8
67	Effects of Experimental Methods on the Measurements of a Nonlinear Structure. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 491-500.	0.5	8
68	A Comparison of Reduced Order Modeling Techniques Used in Dynamic Substructuring. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 511-528.	0.5	5
69	A Reduced Iwan Model that Includes Pinning for Bolted Joint Mechanics. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 231-240.	0.5	0
70	Fully Parameterized Reduced Order Models Using Hyper-Dual Numbers and Component Mode Synthesis. , 2015, , .		6
71	Quantifying Epistemic and Aleatoric Uncertainty in the Ampair 600 Wind Turbine. Conference Proceedings of the Society for Experimental Mechanics, 2015, , 125-138.	0.5	1
72	An analytical elastic plastic contact model with strain hardening and frictional effects for normal and oblique impacts. International Journal of Solids and Structures, 2015, 62, 104-123.	2.7	86

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73	Determination of the limits of quasi-static/rigid and dynamic solutions for problems with frictional interfaces. Tribology International, 2014, 76, 45-56.	5.9	3
74	The role of epistemic uncertainty of contact models in the design and optimization of mechanical systems with aleatoric uncertainty. Nonlinear Dynamics, 2014, 77, 899-922.	5.2	14
75	Variability and Repeatability of Jointed Structures with Frictional Interfaces. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 245-252.	0.5	24
76	Evaluating Convergence of Reduced Order Models Using Nonlinear Normal Modes. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 287-300.	0.5	12
77	Parameterized Reduced Order Models Constructed Using Hyper Dual Numbers. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 179-192.	0.5	0
78	Efficient Stochastic Finite Element Modeling Using Parameterized Reduced Order Models. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 193-201.	0.5	0
79	The effect of the contact model on the impact-vibration response of continuous and discrete systems. Journal of Sound and Vibration, 2013, 332, 3849-3878.	3.9	30
80	Modelling localized nonlinearities in continuous systems via the method of augmentation by non-smooth basis functions. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20130260.	2.1	11
81	A stable Galerkin reduced order model for coupled fluid-structure interaction problems. International Journal for Numerical Methods in Engineering, 2013, 95, 121-144.	2.8	12
82	Epistemic and Aleatoric Uncertainty in Modeling. , 2013, , .		4
83	The Role of Epistemic Uncertainty of Contact Models in the Design of Mechanical Systems. , 2013, , .		0
84	The Effect of the Contact Model on the Design of Mechanical Systems. , 2012, , .		0
85	An analytical elastic-perfectly plastic contact model. International Journal of Solids and Structures, 2012, 49, 3129-3141.	2.7	186
86	Nonlinear Model Reduction of von Kármán Plates Under Linearized Compressible Fluid Flow. AIAA Journal, 2012, 50, 1047-1059.	2.6	7
87	The Effect of the Impact Model on Vibration Response of Discrete and Continuous Systems. , 2012, , .		0
88	A hybrid approach for the modal analysis of continuous systems with discrete piecewise-linear constraints. Journal of Sound and Vibration, 2011, 330, 3196-3221.	3.9	12
89	An inverse shock response spectrum. Mechanical Systems and Signal Processing, 2011, 25, 2654-2672.	8.0	19
90	A New Approach to Modeling Discrete Nonlinear Constraints in Continuous Systems: The Method of Discontinuous Basis Functions. , 2011, , .		1

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91	Modal analysis of a continuous gyroscopic second-order system with nonlinear constraints. Journal of Sound and Vibration, 2010, 329, 893-911.	3.9	17
92	Tilted guides with friction in web conveyance systems. International Journal of Solids and Structures, 2010, 47, 2952-2957.	2.7	9
93	Lateral Vibration and Read/Write Head Servo Dynamics in Magnetic Tape Transport. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2010, 132, .	1.6	5
94	Nonlinear Model Reduction of von Kármán Plates Under Quasi-Steady Fluid Flow. AIAA Journal, 2010, 48, 2339-2347.	2.6	15
95	Modeling and Measurement of a Bistable Beam in a Microelectromechanical System. Journal of Microelectromechanical Systems, 2010, 19, 1503-1514.	2.5	26
96	A Hybrid Approach for the Modal Analysis of Continuous Systems With Localized Nonlinear Constraints. , 2010, , .		0
97	Modal Analysis of a Gyroscopic System With Nonlinear Constraints. , 2009, , .		0
98	Frictional vibration transmission from a laterally moving surface to a traveling beam. Journal of Sound and Vibration, 2008, 310, 663-675.	3.9	23
99	Frictional Vibration Transmission From a Laterally Moving Surface to a Traveling Beam. , 2007, , .		0
100	Optimizing Vibration Isolation of Flex Circuits in Hard Disk Drives. Journal of Vibration and Acoustics, Transactions of the ASME, 2005, 127, 165-172.	1.6	13
101	Optimizing Vibration Isolation of Flex Circuits in Hard Disk Drives. , 2003, , .		0