

David J Wagg

List of Publications by Year in descending order

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137
papers

3,538
citations

147786

31
h-index

155644

55
g-index

151
all docs

151
docs citations

151
times ranked

1699
citing authors

#	ARTICLE	IF	CITATIONS
1	Experimental shake table validation of damping behaviour in inerter-based dampers. Bulletin of Earthquake Engineering, 2023, 21, 1389-1409.	4.1	8
2	Robust equation discovery considering model discrepancy: A sparse Bayesian and Gaussian process approach. Mechanical Systems and Signal Processing, 2022, 168, 108717.	8.0	4
3	Development of a digital twin operational platform using Python Flask. Data-Centric Engineering, 2022, 3, .	2.3	9
4	Design, testing and analysis of a pivoted-bar inerter device used as a vibration absorber. Mechanical Systems and Signal Processing, 2022, 171, 108893.	8.0	9
5	A transfer learning-based digital twin for detecting localised torsional friction in deviated wells. Mechanical Systems and Signal Processing, 2022, 173, 109000.	8.0	12
6	On generative models as the basis for digital twins. Data-Centric Engineering, 2021, 2, .	2.3	13
7	CASE STUDY OF CONNECTIVITY OF DIGITAL TWINS AND EXPERIMENTAL SYSTEMS. , 2021, , .		4
8	A review of the mechanical inerter: historical context, physical realisations and nonlinear applications. Nonlinear Dynamics, 2021, 104, 13-34.	5.2	58
9	On sensor optimisation for structural health monitoring robust to environmental variations. Wind Energy Science, 2021, 6, 1107-1116.	3.3	1
10	Digital Twin Operational Platform for Connectivity and Accessibility using Flask Python. , 2021, , .		5
11	Robust Model Predictive Control for Dynamics Compensation in Real-Time Hybrid Simulation. Frontiers in Built Environment, 2020, 6, .	2.3	4
12	Towards the Development of an Operational Digital Twin. Vibration, 2020, 3, 235-265.	1.9	29
13	Tuned inerter dampers with linear hysteretic damping. Earthquake Engineering and Structural Dynamics, 2020, 49, 1216-1235.	4.4	36
14	Modeling a helical fluid inerter system with time-invariant mem-models. Structural Control and Health Monitoring, 2020, 27, e2579.	4.0	8
15	COMPUTING BACKBONE CURVES FOR NONLINEAR OSCILLATORS WITH HIGHER ORDER POLYNOMIAL STIFFNESS TERMS. , 2020, , .		0
16	THE EFFECTS OF PARASITIC MASS ON THE PERFORMANCE OF INERTER-BASED DYNAMIC VIBRATION ABSORBERS. , 2020, , .		1
17	A NEAT APPROACH TO STRUCTURAL HEALTH MONITORING. , 2020, , .		0
18	OPTIMUM DESIGN OF A TUNED-INERTER-HYSTERETIC-DAMPER (TIHD) FOR BUILDING STRUCTURES SUBJECT TO EARTHQUAKE BASE EXCITATIONS. , 2020, , .		1

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19	Real-Time Digital Twin Updating Strategy Based on Structural Health Monitoring Systems. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 55-64.	0.5	4
20	AN APPLICATION OF GENERATIVE ADVERSARIAL NETWORKS IN STRUCTURAL HEALTH MONITORING. , 2020, , .		1
21	Ageing simulation of a hydraulic engine mount: A data-informed finite element approach. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2019, 233, 2432-2442.	1.9	3
22	Simultaneous normal form transformation and model-order reduction for systems of coupled nonlinear oscillators. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2019, 475, 20190042.	2.1	7
23	Investigation of the inerter-based dynamic vibration absorber for machining chatter suppression. Journal of Physics: Conference Series, 2019, 1264, 012030.	0.4	0
24	Special issue on Inerter-based systems: Design, modeling, optimization and control. Journal of the Franklin Institute, 2019, 356, 7609-7610.	3.4	1
25	Model selection and parameter estimation of dynamical systems using a novel variant of approximate Bayesian computation. Mechanical Systems and Signal Processing, 2019, 122, 364-386.	8.0	24
26	Design and testing of a frictionless mechanical inerter device using living-hinges. Journal of the Franklin Institute, 2019, 356, 7650-7668.	3.4	42
27	Novel fluid inerter based tuned mass dampers for optimised structural control of base-isolated buildings. Journal of the Franklin Institute, 2019, 356, 7626-7649.	3.4	126
28	Nonlinear modal analysis via non-parametric machine learning tools. Strain, 2019, 55, e12297.	2.4	16
29	The Realisation of an Inerter-Based System Using Fluid Inerter. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 127-134.	0.5	6
30	Magnetorheological bypass valve design for a semi-active inerter. , 2019, , .		1
31	IMPROVED SEISMIC BASE ISOLATION COMBINED WITH FLUID INERTER AND TUNED MASS DAMPER. , 2019, , .		0
32	Model selection and parameter estimation in structural dynamics using approximate Bayesian computation. Mechanical Systems and Signal Processing, 2018, 99, 306-325.	8.0	55
33	Ageing of a polymeric engine mount investigated using digital image correlation. Polymer Testing, 2018, 71, 137-144.	4.8	6
34	On the dynamic behavior of the Zener model with nonlinear stiffness for harmonic vibration isolation. Mechanical Systems and Signal Processing, 2018, 112, 343-358.	8.0	15
35	Semi-active inerters using magnetorheological fluid: a feasibility study. , 2018, , .		1
36	Equivalent force control combined with adaptive polynomial-based forward prediction for real-time hybrid simulation. Structural Control and Health Monitoring, 2017, 24, e2018.	4.0	16

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37	A report on the 6th European Conference on Structural Control. Structural Control and Health Monitoring, 2017, 24, e1970.	4.0	1
38	Comparing the direct normal form method with harmonic balance and the method of multiple scales. Procedia Engineering, 2017, 199, 869-874.	1.2	8
39	Automatic Kernel Selection for Gaussian Processes Regression with Approximate Bayesian Computation and Sequential Monte Carlo. Frontiers in Built Environment, 2017, 3, .	2.3	34
40	Hybrid Active and Semi-Active Control for Vibration Suppression in Flexible Structures. , 2016, , .		1
41	Improving the vibration suppression capabilities of a magneto-rheological damper using hybrid active and semi-active control. Smart Materials and Structures, 2016, 25, 085045.	3.5	3
42	Nonlinear robust observer design using an invariant manifold approach. Control Engineering Practice, 2016, 55, 69-79.	5.5	5
43	Vibration suppression of cables using tuned inerter dampers. Engineering Structures, 2016, 122, 62-71.	5.3	196
44	Rapid Path Planning for Zero-Propellant Maneuvers. Journal of Aerospace Engineering, 2016, 29, .	1.4	4
45	Nonlinear modal interactions of a three-degree-of-freedom system with cubic elastic nonlinearities. Nonlinear Dynamics, 2016, 83, 497-511.	5.2	10
46	Performance Analysis of Cables with Attached Tuned-Inerter-Dampers. Conference Proceedings of the Society for Experimental Mechanics, 2015, , 433-441.	0.5	10
47	Interpreting the forced responses of a two-degree-of-freedom nonlinear oscillator using backbone curves. Journal of Sound and Vibration, 2015, 349, 276-288.	3.9	70
48	The use of normal forms for analysing nonlinear mechanical vibrations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140404.	3.4	43
49	Using a damper amplification factor to increase energy dissipation in structures. Engineering Structures, 2015, 84, 162-171.	5.3	14
50	Approximate Methods for Analysing Nonlinear Vibrations. Solid Mechanics and Its Applications, 2015, , 145-209.	0.2	1
51	Modal Analysis for Nonlinear Vibration. Solid Mechanics and Its Applications, 2015, , 211-259.	0.2	0
52	Bifurcations of backbone curves for systems of coupled nonlinear two mass oscillator. Nonlinear Dynamics, 2014, 77, 311-320.	5.2	48
53	Using an inerter-based device for structural vibration suppression. Earthquake Engineering and Structural Dynamics, 2014, 43, 1129-1147.	4.4	518
54	Optimum resistive loads for vibration-based electromagnetic energy harvesters with a stiffening nonlinearity. Journal of Intelligent Material Systems and Structures, 2014, 25, 1757-1770.	2.5	34

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55	Supporting brace sizing in structures with added linear viscous fluid dampers: A filter design solution. <i>Earthquake Engineering and Structural Dynamics</i> , 2014, 43, 1999-2013.	4.4	12
56	Design and Performance Analysis of Inerter-Based Vibration Control Systems. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2014, , 493-500.	0.5	5
57	A generalized frequency detuning method for multidegree-of-freedom oscillators with nonlinear stiffness. <i>Nonlinear Dynamics</i> , 2013, 73, 649-663.	5.2	16
58	A nonlinear spring mechanism incorporating a bistable composite plate for vibration isolation. <i>Journal of Sound and Vibration</i> , 2013, 332, 6265-6275.	3.9	135
59	A noniterative design procedure for supplemental brace-damper systems in single-degree-of-freedom systems. <i>Earthquake Engineering and Structural Dynamics</i> , 2013, 42, 2361-2367.	4.4	11
60	Dynamic analysis of high static low dynamic stiffness vibration isolation mounts. <i>Journal of Sound and Vibration</i> , 2013, 332, 1437-1455.	3.9	79
61	Resonant response functions for nonlinear oscillators with polynomial type nonlinearities. <i>Journal of Sound and Vibration</i> , 2013, 332, 1777-1788.	3.9	13
62	The impacting cantilever: modal non-convergence and the importance of stiffness matching. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2013, 371, 20120434.	3.4	17
63	Power-constrained intermittent control. <i>International Journal of Control</i> , 2013, 86, 396-409.	1.9	11
64	Experimental Investigation Into A Vibration Isolator Incorporating A Bistable Composite Plate. , 2013, , .		2
65	Robust Measurement Feedback Control of an Inclined Cable. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2013, 46, 55-60.	0.4	1
66	H _∞ -control with state feedback of an inclined cable. , 2013, , .		1
67	Nonlinear Modal Decomposition Using Normal Form Transformations. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2013, , 179-187.	0.5	1
68	Semi-active damping using a hybrid control approach. <i>Journal of Intelligent Material Systems and Structures</i> , 2012, 23, 2103-2116.	2.5	18
69	Towards a Technique for Nonlinear Modal Analysis. , 2012, , .		3
70	Higher order accuracy analysis of the second-order normal form method. <i>Nonlinear Dynamics</i> , 2012, 70, 2175-2185.	5.2	6
71	A novel intelligent mechatronic system for hybrid testing. , 2012, , .		0
72	Introductory Material. , 2012, , 1-52.		0

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73	Control and exploitation of nonlinearity in smart structures. , 2012, , 225-279.		1
74	Synthesis of flatness control for a multi-axis robot manipulator: An experimental approach. , 2011, , .		5
75	Applying the method of normal forms to second-order nonlinear vibration problems. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 1141-1163.	2.1	65
76	Influence of Damping on the Vibration of an Inclined Cable Subjected to Support Excitation. , 2011, , .		1
77	Bifurcation analysis of a parametrically excited inclined cable close to two-to-one internal resonance. Journal of Sound and Vibration, 2011, 330, 6023-6035.	3.9	25
78	Rosenbrock-based algorithms and subcycling strategies for real-time nonlinear substructure testing. Earthquake Engineering and Structural Dynamics, 2011, 40, 1-19.	4.4	32
79	Vibration damping in bolted friction beam-columns. Journal of Sound and Vibration, 2011, 330, 1665-1679.	3.9	20
80	Quasi-active suspension design using magnetorheological dampers. Journal of Sound and Vibration, 2011, 330, 2201-2219.	3.9	21
81	On the cross-well dynamics of a bi-stable composite plate. Journal of Sound and Vibration, 2011, 330, 3424-3441.	3.9	62
82	Dynamic Snap-through for Morphing of Bi-stable Composite Plates. Journal of Intelligent Material Systems and Structures, 2011, 22, 103-112.	2.5	77
83	Control-Based Continuation of Unstable Periodic Orbits. Journal of Computational and Nonlinear Dynamics, 2011, 6, .	1.2	23
84	Low order model for the dynamics of bi-stable composite plates. Journal of Intelligent Material Systems and Structures, 2011, 22, 2025-2043.	2.5	28
85	The Effect of Interface Delays in Substructuring Experiments. , 2011, , .		0
86	Generalisation and optimisation of semi-active, on/off switching controllers for single degree-of-freedom systems. Journal of Sound and Vibration, 2010, 329, 2450-2462.	3.9	23
87	Generalised modal stability of inclined cables subjected to support excitations. Journal of Sound and Vibration, 2010, 329, 4515-4533.	3.9	47
88	Nonlinear Vibration with Control. Noise Control Engineering Journal, 2010, 58, 462.	0.3	8
89	Nonlinear proportional-derivative-type controller for flexible spacecraft attitude stabilization under bounded disturbances. , 2009, , .		0
90	Causality in real-time dynamic substructure testing. Mechatronics, 2009, 19, 1105-1115.	3.3	19

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91	Nonlinear dynamic response and modeling of a bi-stable composite plate for applications to adaptive structures. <i>Nonlinear Dynamics</i> , 2009, 58, 259-272.	5.2	72
92	Modelling of a Bi-Stable Composite Plate for Adaptive Structures. , 2009, , .		0
93	Adaptive backstepping fault-tolerant control for flexible spacecraft with bounded unknown disturbances. , 2009, , .		7
94	Control-Based Continuation of Unstable Periodic Orbits. , 2009, , .		0
95	Vibration Damping in Bolted Friction Beam-Columns. , 2009, , .		1
96	Interaction Between In-Plane and Out-of-Plane Cable Modes for a Cable-Deck System. , 2009, , .		1
97	Quasi-Active Damping. , 2009, , .		1
98	Novel coupling Rosenbrock-based algorithms for real-time dynamic substructure testing. <i>Earthquake Engineering and Structural Dynamics</i> , 2008, 37, 339-360.	4.4	50
99	On the interaction of exponential non-viscous damping with symmetric nonlinearities. <i>Journal of Sound and Vibration</i> , 2008, 314, 1-11.	3.9	15
100	Modal stability of inclined cables subjected to vertical support excitation. <i>Journal of Sound and Vibration</i> , 2008, 318, 565-579.	3.9	55
101	Emulator-based control for actuator-based hardware-in-the-loop testing. <i>Control Engineering Practice</i> , 2008, 16, 897-908.	5.5	30
102	Experimental Continuation of Periodic Orbits through a Fold. <i>Physical Review Letters</i> , 2008, 100, 244101.	7.8	78
103	Real-Time Testing With Dynamic Substructuring. <i>CISM International Centre for Mechanical Sciences, Courses and Lectures</i> , 2008, , 293-342.	0.6	8
104	Vibration Control of Composite Beams Using Adaptive Positive Position Feedback. , 2007, , 863.		3
105	Nonlinear Normal Modes and Localization in Elastic Vibro-Impact Systems With Multiple Constraints. , 2007, , 203.		0
106	A note on coefficient of restitution models including the effects of impact induced vibration. <i>Journal of Sound and Vibration</i> , 2007, 300, 1071-1078.	3.9	25
107	Testing coupled rotor blade-lag damper vibration using real-time dynamic substructuring. <i>Journal of Sound and Vibration</i> , 2007, 307, 737-754.	3.9	27
108	A Comparison of Runge Kutta and Novel L-Stable Methods for Real-Time Integration Methods for Dynamic Substructuring. , 2006, , 1219.		0

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109	Multiple Non-Smooth Events in Multi-Degree-of-Freedom Vibro-Impact Systems. <i>Nonlinear Dynamics</i> , 2006, 43, 137-148.	5.2	39
110	Stability Switches in a Neutral Delay Differential Equation with Application to Real-Time Dynamic Substructuring. <i>Applied Mechanics and Materials</i> , 2006, 5-6, 79-84.	0.2	10
111	Modelling Autoparametric Resonance in a Coupled Pendulum Oscillator System Using Hybrid Testing. , 2005, , 2065.		0
112	Periodic sticking motion in a two-degree-of-freedom impact oscillator. <i>International Journal of Non-Linear Mechanics</i> , 2005, 40, 1076-1087.	2.6	66
113	Bond-graph based substructuring of dynamical systems. <i>Earthquake Engineering and Structural Dynamics</i> , 2005, 34, 687.	4.4	13
114	Control issues relating to real-time substructuring experiments using a shaking table. <i>Earthquake Engineering and Structural Dynamics</i> , 2005, 34, 1171-1192.	4.4	83
115	Stability analysis of real-time dynamic substructuring using delay differential equation models. <i>Earthquake Engineering and Structural Dynamics</i> , 2005, 34, 1817-1832.	4.4	159
116	Delay Differential Equation Models for Real-Time Dynamic Substructuring. , 2005, , 875.		0
117	DYNAMICS OF A TWO DEGREE OF FREEDOM VIBRO-IMPACT SYSTEM WITH MULTIPLE MOTION LIMITING CONSTRAINTS. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2004, 14, 119-140.	1.7	28
118	A note on using the collocation method for modelling the dynamics of a flexible continuous beam subject to impacts. <i>Journal of Sound and Vibration</i> , 2004, 276, 1128-1134.	3.9	11
119	Rising phenomena and the multi-sliding bifurcation in a two-degree of freedom impact oscillator. <i>Chaos, Solitons and Fractals</i> , 2004, 22, 541-548.	5.1	57
120	Adaptive Control of Nonlinear Dynamical Systems Using a Model Reference Approach. <i>Meccanica</i> , 2003, 38, 227-238.	2.0	21
121	PARTIAL SYNCHRONIZATION OF NONIDENTICAL CHAOTIC SYSTEMS VIA ADAPTIVE CONTROL, WITH APPLICATIONS TO MODELING COUPLED NONLINEAR SYSTEMS. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2002, 12, 561-570.	1.7	21
122	APPLICATION OF NON-SMOOTH MODELLING TECHNIQUES TO THE DYNAMICS OF A FLEXIBLE IMPACTING BEAM. <i>Journal of Sound and Vibration</i> , 2002, 256, 803-820.	3.9	60
123	CHATTER, STICKING AND CHAOTIC IMPACTING MOTION IN A TWO-DEGREE OF FREEDOM IMPACT OSCILLATOR. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2001, 11, 57-71.	1.7	52
124	Substructuring of dynamical systems via the adaptive minimal control synthesis algorithm. <i>Earthquake Engineering and Structural Dynamics</i> , 2001, 30, 865-877.	4.4	61
125	AN EXPERIMENTAL STUDY OF THE IMPULSE RESPONSE OF A VIBRO-IMPACTING CANTILEVER BEAM. <i>Journal of Sound and Vibration</i> , 1999, 228, 243-264.	3.9	36
126	Use of control to maintain period-1 motions during wind-up or wind-down operations of an impacting driven beam. <i>Chaos, Solitons and Fractals</i> , 1998, 9, 261-269.	5.1	19

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127	Adaptive Structures for Structural Health Monitoring. , 0, , 1-32.		2
128	Distributed Sensing for Active Control. , 0, , 33-57.		0
129	Global Vibration Control Through Local Feedback. , 0, , 59-87.		0
130	Lightweight Shape-Adaptable Airfoils: A New Challenge for an Old Dream. , 0, , 89-135.		24
131	Adaptive Aeroelastic Structures. , 0, , 137-162.		8
132	A Summary of Several Studies with Unsymmetric Laminates. , 0, , 191-229.		1
133	Adaptive Aerospace Structures with Smart Technologiesâ€“ A Retrospective and Future View. , 0, , 163-190.		2
134	Negative Stiffness and Negative Poisson's Ratio in Materials which Undergo a Phase Transformation. , 0, , 231-246.		12
135	Recent Advances in Self-Healing Materials Systems. , 0, , 247-260.		5
136	Adaptive Structuresâ€“ Some Biological Paradigms. , 0, , 261-285.		4
137	Dynamic Modelling of a Hydraulic Engine Mount Including the Effects of Elastomer Ageing. SAE International Journal of Engines, 0, 14, 99-114.	0.4	0