David J Wagg

List of Publications by Year
in descending order

137 papers	3,538 citations	147801 31 h-index	155660 55 g-index
151 all docs	151 docs citations	151 times ranked	1699 citing authors

#	Article	IF	Citations
1	Using an inerter‐based device for structural vibration suppression. Earthquake Engineering and Structural Dynamics, 2014, 43, 1129-1147.	4.4	518
2	Vibration suppression of cables using tuned inerter dampers. Engineering Structures, 2016, 122, 62-71.	5.3	196
3	Stability analysis of real-time dynamic substructuring using delay differential equation models. Earthquake Engineering and Structural Dynamics, 2005, 34, 1817-1832.	4.4	159
4	A nonlinear spring mechanism incorporating a bistable composite plate for vibration isolation. Journal of Sound and Vibration, 2013, 332, 6265-6275.	3.9	135
5	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
6	Control issues relating to real-time substructuring experiments using a shaking table. Earthquake Engineering and Structural Dynamics, 2005, 34, 1171-1192.	4.4	83
7	Dynamic analysis of high static low dynamic stiffness vibration isolation mounts. Journal of Sound and Vibration, 2013, 332, 1437-1455.	3.9	79
8	Experimental Continuation of Periodic Orbits through a Fold. Physical Review Letters, 2008, 100, 244101.	7.8	78
9	Dynamic Snap-through for Morphing of Bi-stable Composite Plates. Journal of Intelligent Material Systems and Structures, 2011, 22, 103-112.	2.5	77
10	Nonlinear dynamic response and modeling of a bi-stable composite plate for applications to adaptive structures. Nonlinear Dynamics, 2009, 58, 259-272.	5.2	72
11	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
12	Periodic sticking motion in a two-degree-of-freedom impact oscillator. International Journal of Non-Linear Mechanics, 2005, 40, 1076-1087.	2.6	66
13	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
14	On the cross-well dynamics of a bi-stable composite plate. Journal of Sound and Vibration, 2011, 330, 3424-3441.	3.9	62
15	Substructuring of dynamical systems via the adaptive minimal control synthesis algorithm. Earthquake Engineering and Structural Dynamics, 2001, 30, 865-877.	4.4	61
16	APPLICATION OF NON-SMOOTH MODELLING TECHNIQUES TO THE DYNAMICS OF A FLEXIBLE IMPACTING BEAM. Journal of Sound and Vibration, 2002, 256, 803-820.	3.9	60
17	A review of the mechanical inerter: historical context, physical realisations and nonlinear applications. Nonlinear Dynamics, 2021, 104, 13-34.	5.2	58
18	Rising phenomena and the multi-sliding bifurcation in a two-degree of freedom impact oscillator. Chaos, Solitons and Fractals, 2004, 22, 541-548.	5.1	57

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19	Modal stability of inclined cables subjected to vertical support excitation. Journal of Sound and Vibration, 2008, 318, 565-579.	3.9	55
20	Model selection and parameter estimation in structural dynamics using approximate Bayesian computation. Mechanical Systems and Signal Processing, 2018, 99, 306-325.	8.0	55
21	CHATTER, STICKING AND CHAOTIC IMPACTING MOTION IN A TWO-DEGREE OF FREEDOM IMPACT OSCILLATOR. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2001, 11, 57-71.	1.7	52
22	Novel coupling Rosenbrockâ€based algorithms for realâ€time dynamic substructure testing. Earthquake Engineering and Structural Dynamics, 2008, 37, 339-360.	4.4	50
23	Bifurcations of backbone curves for systems of coupled nonlinear two mass oscillator. Nonlinear Dynamics, 2014, 77, 311-320.	5.2	48
24	Generalised modal stability of inclined cables subjected to support excitations. Journal of Sound and Vibration, 2010, 329, 4515-4533.	3.9	47
25	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
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	Multiple Non-Smooth Events in Multi-Degree-of-Freedom Vibro-Impact Systems. Nonlinear Dynamics, 2006, 43, 137-148.	5.2	39
28	AN EXPERIMENTAL STUDY OF THE IMPULSE RESPONSE OF A VIBRO-IMPACTING CANTILEVER BEAM. Journal of Sound and Vibration, 1999, 228, 243-264.	3.9	36
29	Tuned inerter dampers with linear hysteretic damping. Earthquake Engineering and Structural Dynamics, 2020, 49, 1216-1235.	4.4	36
30	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
31	Automatic Kernel Selection for Gaussian Processes Regression with Approximate Bayesian Computation and Sequential Monte Carlo. Frontiers in Built Environment, 2017, 3, .	2.3	34
32	Rosenbrockâ€based algorithms and subcycling strategies for realâ€time nonlinear substructure testing. Earthquake Engineering and Structural Dynamics, 2011, 40, 1-19.	4.4	32
33	Emulator-based control for actuator-based hardware-in-the-loop testing. Control Engineering Practice, 2008, 16, 897-908.	5.5	30
34	Towards the Development of an Operational Digital Twin. Vibration, 2020, 3, 235-265.	1.9	29
35	DYNAMICS OF A TWO DEGREE OF FREEDOM VIBRO-IMPACT SYSTEM WITH MULTIPLE MOTION LIMITING CONSTRAINTS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2004, 14, 119-140.	1.7	28
36	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

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37	Testing coupled rotor blade–lag damper vibration using real-time dynamic substructuring. Journal of Sound and Vibration, 2007, 307, 737-754.	3.9	27
38	A note on coefficient of restitution models including the effects of impact induced vibration. Journal of Sound and Vibration, 2007, 300, 1071-1078.	3.9	25
39	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
40	Lightweight Shape-Adaptable Airfoils: A New Challenge for an Old Dream. , 0, , 89-135.		24
41	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
42	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
43	Control-Based Continuation of Unstable Periodic Orbits. Journal of Computational and Nonlinear Dynamics, 2011, 6, .	1.2	23
44	PARTIAL SYNCHRONIZATION OF NONIDENTICAL CHAOTIC SYSTEMS VIA ADAPTIVE CONTROL, WITH APPLICATIONS TO MODELING COUPLED NONLINEAR SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2002, 12, 561-570.	1.7	21
45	Adaptive Control of Nonlinear Dynamical Systems Using a Model Reference Approach. Meccanica, 2003, 38, 227-238.	2.0	21
46	Quasi-active suspension design using magnetorheological dampers. Journal of Sound and Vibration, 2011, 330, 2201-2219.	3.9	21
47	Vibration damping in bolted friction beam-columns. Journal of Sound and Vibration, 2011, 330, 1665-1679.	3.9	20
48	Use of control to maintain period-1 motions during wind-up or wind-down operations of an impacting driven beam. Chaos, Solitons and Fractals, 1998, 9, 261-269.	5.1	19
49	Causality in real-time dynamic substructure testing. Mechatronics, 2009, 19, 1105-1115.	3.3	19
50	Semi-active damping using a hybrid control approach. Journal of Intelligent Material Systems and Structures, 2012, 23, 2103-2116.	2.5	18
51	The impacting cantilever: modal non-convergence and the importance of stiffness matching. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120434.	3.4	17
52	A generalized frequency detuning method for multidegree-of-freedom oscillators with nonlinear stiffness. Nonlinear Dynamics, 2013, 73, 649-663.	5.2	16
53	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
54	Nonlinear modal analysis via non-parametric machine learning tools. Strain, 2019, 55, e12297.	2.4	16

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55	On the interaction of exponential non-viscous damping with symmetric nonlinearities. Journal of Sound and Vibration, 2008, 314, 1-11.	3.9	15
56	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
57	Using a damper amplification factor to increase energy dissipation in structures. Engineering Structures, 2015, 84, 162-171.	5.3	14
58	Bond-graph based substructuring of dynamical systems. Earthquake Engineering and Structural Dynamics, 2005, 34, 687.	4.4	13
59	Resonant response functions for nonlinear oscillators with polynomial type nonlinearities. Journal of Sound and Vibration, 2013, 332, 1777-1788.	3.9	13
60	On generative models as the basis for digital twins. Data-Centric Engineering, 2021, 2, .	2.3	13
61	Negative Stiffness and Negative Poisson's Ratio in Materials which Undergo a Phase Transformation. , 0, , 231-246.		12
62	Supporting brace sizing in structures with added linear viscous fluid dampers: A filter design solution. Earthquake Engineering and Structural Dynamics, 2014, 43, 1999-2013.	4.4	12
63	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
64	A note on using the collocation method for modelling the dynamics of a flexible continuous beam subject to impacts. Journal of Sound and Vibration, 2004, 276, 1128-1134.	3.9	11
65	A noniterative design procedure for supplemental brace–damper systems in single–degree–of–freedom systems. Earthquake Engineering and Structural Dynamics, 2013, 42, 2361-2367.	4.4	11
66	Power-constrained intermittent control. International Journal of Control, 2013, 86, 396-409.	1.9	11
67	Stability Switches in a Neutral Delay Differential Equation with Application to Real-Time Dynamic Substructuring. Applied Mechanics and Materials, 2006, 5-6, 79-84.	0.2	10
68	Performance Analysis of Cables with Attached Tuned-Inerter-Dampers. Conference Proceedings of the Society for Experimental Mechanics, 2015, , 433-441.	0.5	10
69	$$N-1$$ N - 1 modal interactions of a three-degree-of-freedom system with cubic elastic nonlinearities. Nonlinear Dynamics, 2016, 83, 497-511.	5.2	10
70	Development of a digital twin operational platform using Python Flask. Data-Centric Engineering, 2022, 3, .	2.3	9
71	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
72	Adaptive Aeroelastic Structures. , 0, , 137-162.		8

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73	Nonlinear Vibration with Control. Noise Control Engineering Journal, 2010, 58, 462.	0.3	8
74	Comparing the direct normal form method with harmonic balance and the method of multiple scales. Procedia Engineering, 2017, 199, 869-874.	1.2	8
75	Modeling a helical fluid inerter system with time–invariant mem–models. Structural Control and Health Monitoring, 2020, 27, e2579.	4.0	8
76	Real-Time Testing With Dynamic Substructuring. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2008, , 293-342.	0.6	8
77	Experimental shake table validation of damping behaviour in inerter-based dampers. Bulletin of Earthquake Engineering, 2023, 21, 1389-1409.	4.1	8
78	Adaptive backstepping fault-tolerant control for flexible spacecraft with bounded unknown disturbances. , 2009, , .		7
79	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
80	Higher order accuracy analysis of the second-order normal form method. Nonlinear Dynamics, 2012, 70, 2175-2185.	5.2	6
81	Ageing of a polymeric engine mount investigated using digital image correlation. Polymer Testing, 2018, 71, 137-144.	4.8	6
82	The Realisation of an Inerter-Based System Using Fluid Inerter. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 127-134.	0.5	6
83	Recent Advances in Self-Healing Materials Systems. , 0, , 247-260.		5
84	Synthesis of flatness control for a multi-axis robot manipulator: An experimental approach. , 2011, , .		5
85	Nonlinear robust observer design using an invariant manifold approach. Control Engineering Practice, 2016, 55, 69-79.	5.5	5
86	Design and Performance Analysis of Inerter-Based Vibration Control Systems. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 493-500.	0.5	5
87	Digital Twin Operational Platform for Connectivity and Accessibility using Flask Python. , 2021, , .		5
88	Adaptive Structures– Some Biological Paradigms. , 0, , 261-285.		4
89	Rapid Path Planning for Zero-Propellant Maneuvers. Journal of Aerospace Engineering, 2016, 29, .	1.4	4
90	Robust Model Predictive Control for Dynamics Compensation in Real-Time Hybrid Simulation. Frontiers in Built Environment, 2020, 6, .	2.3	4

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91	CASE STUDY OF CONNECTIVITY OF DIGITAL TWINS AND EXPERIMENTAL SYSTEMS. , 2021, , .		4
92	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
93	Robust equation discovery considering model discrepancy: A sparse Bayesian and Gaussian process approach. Mechanical Systems and Signal Processing, 2022, 168, 108717.	8.0	4
94	Vibration Control of Composite Beams Using Adaptive Positive Position Feedback. , 2007, , 863.		3
95	Towards a Technique for Nonlinear Modal Analysis. , 2012, , .		3
96	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
97	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
98	Adaptive Structures for Structural Health Monitoring. , 0, , 1-32.		2
99	Adaptive Aerospace Structures with Smart Technologiesâ€" A Retrospective and Future View. , 0, , 163-190.		2
100	Experimental Investigation Into A Vibration Isolator Incorporating A Bistable Composite Plate. , 2013, , .		2
101	A Summary of Several Studies with Unsymmetric Laminates. , 0, , 191-229.		1
102	Vibration Damping in Bolted Friction Beam-Columns. , 2009, , .		1
103	Interaction Between In-Plane and Out-of-Plane Cable Modes for a Cable-Deck System. , 2009, , .		1
104	Influence of Damping on the Vibration of an Inclined Cable Subjected to Support Excitation. , 2011, , .		1
105	Robust Measurement Feedback Control of an Inclined Cable. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 55-60.	0.4	1
106	H$_\infty$-control with state feedback of an inclined cable. , 2013, , .		1
107	Hybrid Active and Semi-Active Control for Vibration Suppression in Flexible Structures. , 2016, , .		1
108	A report on the 6th European Conference on Structural Control. Structural Control and Health Monitoring, 2017, 24, e1970.	4.0	1

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109	Special issue on Inerter-based systems: Design, modeling, optimization and control. Journal of the Franklin Institute, 2019, 356, 7609-7610.	3.4	1
110	On sensor optimisation for structural health monitoring robust to environmental variations. Wind Energy Science, 2021, 6, 1107-1116.	3.3	1
111	Approximate Methods for Analysing Nonlinear Vibrations. Solid Mechanics and Its Applications, 2015, , 145-209.	0.2	1
112	Quasi-Active Damping. , 2009, , .		1
113	Semi-active inerters using magnetorheological fluid: a feasibility study. , 2018, , .		1
114	Magnetorheological bypass valve design for a semi-active inerter. , 2019, , .		1
115	Control and exploitation of nonlinearity in smart structures. , 2012, , 225-279.		1
116	Nonlinear Modal Decomposition Using Normal Form Transformations. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 179-187.	0.5	1
117	THE EFFECTS OF PARASITIC MASS ON THE PERFORMANCE OF INERTER-BASED DYNAMIC VIBRATION ABSORBERS. , 2020, , .		1
118	OPTIMUM DESIGN OF A TUNED-INERTER-HYSTERETIC-DAMPER (TIHD) FOR BUILDING STRUCTURES SUBJECT TO EARTHQUAKE BASE EXCITATIONS. , 2020, , .		1
119	AN APPLICATION OF GENERATIVE ADVERSARIAL NETWORKS IN STRUCTURAL HEALTH MONITORING. , 2020, , .		1
120	Modelling Autoparametric Resonance in a Coupled Pendulum Oscillator System Using Hybrid Testing. , 2005, , 2065.		0
121	Delay Differential Equation Models for Real-Time Dynamic Substructuring. , 2005, , 875.		0
122	A Comparison of Runge Kutta and Novel L-Stable Methods for Real-Time Integration Methods for Dynamic Substructuring. , 2006, , 1219.		0
123	Nonlinear Normal Modes and Localization in Elastic Vibro-Impact Systems With Multiple Constraints. , 2007, , 203.		0
124	Distributed Sensing for Active Control. , 0, , 33-57.		0
125	Global Vibration Control Through Local Feedback. , 0, , 59-87.		0
126	Nonlinear proportional-derivative-type controller for flexible spacecraft attitude stabilization under bounded disturbances. , 2009, , .		0

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127	Modelling of a Bi-Stable Composite Plate for Adaptive Structures. , 2009, , .		0
128	Control-Based Continuation of Unstable Periodic Orbits. , 2009, , .		0
129	A novel intelligent mechatronic system for hybrid testing. , 2012, , .		0
130	Investigation of the inerter-based dynamic vibration absorber for machining chatter suppression. Journal of Physics: Conference Series, 2019, 1264, 012030.	0.4	0
131	The Effect of Interface Delays in Substructuring Experiments. , 2011, , .		0
132	Introductory Material. , 2012, , 1-52.		0
133	Modal Analysis for Nonlinear Vibration. Solid Mechanics and Its Applications, 2015, , 211-259.	0.2	0
134	IMPROVED SEISMIC BASE ISOLATION COMBINED WITH FLUID INERTER AND TUNED MASS DAMPER. , 2019, , .		0
135	COMPUTING BACKBONE CURVES FOR NONLINEAR OSCILLATORS WITH HIGHER ORDER POLYNOMIAL STIFFNESS TERMS. , 2020, , .		0
136	A NEAT APPROACH TO STRUCTURAL HEALTH MONITORING. , 2020, , .		0
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