

John Mottershead

List of Publications by Year in descending order

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150
papers

8,512
citations

38742

50
h-index

48315

88
g-index

157
all docs

157
docs citations

157
times ranked

3444
citing authors

#	ARTICLE	IF	CITATIONS
1	Model Updating In Structural Dynamics: A Survey. Journal of Sound and Vibration, 1993, 167, 347-375.	3.9	1,319
2	The sensitivity method in finite element model updating: A tutorial. Mechanical Systems and Signal Processing, 2011, 25, 2275-2296.	8.0	678
3	Bayesian Updating of Structural Models and Reliability using Markov Chain Monte Carlo Simulation. Journal of Engineering Mechanics - ASCE, 2002, 128, 380-391.	2.9	645
4	A review of robust optimal design and its application in dynamics. Computers and Structures, 2005, 83, 315-326.	4.4	271
5	Fast Bayesian FFT Method for Ambient Modal Identification with Separated Modes. Journal of Engineering Mechanics - ASCE, 2011, 137, 214-226.	2.9	177
6	Perturbation methods for the estimation of parameter variability in stochastic model updating. Mechanical Systems and Signal Processing, 2008, 22, 1751-1773.	8.0	157
7	Bayesian operational modal analysis: Theory, computation, practice. Computers and Structures, 2013, 126, 3-14.	4.4	157
8	Interval model updating with irreducible uncertainty using the Kriging predictor. Mechanical Systems and Signal Processing, 2011, 25, 1204-1226.	8.0	153
9	Finite element model updating using experimental test data: parametrization and regularization. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2001, 359, 169-186.	3.4	135
10	Stochastic model updating: Part 1 theory and simulated example. Mechanical Systems and Signal Processing, 2006, 20, 1674-1695.	8.0	135
11	REGULARISATION METHODS FOR FINITE ELEMENT MODEL UPDATING. Mechanical Systems and Signal Processing, 1998, 12, 47-64.	8.0	134
12	Finite element model updating from full-field vibration measurement using digital image correlation. Journal of Sound and Vibration, 2011, 330, 1599-1620.	3.9	129
13	Receptance Method in Active Vibration Control. AIAA Journal, 2007, 45, 562-567.	2.6	126
14	FRICTION-INDUCED PARAMETRIC RESONANCES IN DISCS: EFFECT OF A NEGATIVE FRICTION VELOCITY RELATIONSHIP. Journal of Sound and Vibration, 1998, 209, 251-264.	3.9	124
15	Bayesian model updating of a coupled-slab system using field test data utilizing an enhanced Markov chain Monte Carlo simulation algorithm. Engineering Structures, 2015, 102, 144-155.	5.3	122
16	Inverse eigenvalue problems in vibration absorption: Passive modification and active control. Mechanical Systems and Signal Processing, 2006, 20, 5-44.	8.0	117
17	Frequency response functions of shape features from full-field vibration measurements using digital image correlation. Mechanical Systems and Signal Processing, 2012, 28, 333-347.	8.0	114
18	Finite elements for dynamical analysis of helical rods. International Journal of Mechanical Sciences, 1980, 22, 267-283.	6.7	102

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19	Experimental and theoretical studies of a bolted joint excited by a torsional dynamic load. International Journal of Mechanical Sciences, 2006, 48, 1447-1455.	6.7	98
20	Uncertainty identification by the maximum likelihood method. Journal of Sound and Vibration, 2005, 288, 587-599.	3.9	96
21	ON THE ZEROS OF STRUCTURAL FREQUENCY RESPONSE FUNCTIONS AND THEIR SENSITIVITIES. Mechanical Systems and Signal Processing, 1998, 12, 591-597.	8.0	92
22	Mode-shape recognition and finite element model updating using the Zernike moment descriptor. Mechanical Systems and Signal Processing, 2009, 23, 2088-2112.	8.0	85
23	GEOMETRIC PARAMETERS FOR FINITE ELEMENT MODEL UPDATING OF JOINTS AND CONSTRAINTS. Mechanical Systems and Signal Processing, 1996, 10, 171-182.	8.0	84
24	Simplified models of bolted joints under harmonic loading. Computers and Structures, 2005, 84, 25-33.	4.4	83
25	Finite element models of spot welds in structural dynamics: review and updating. Computers and Structures, 2005, 83, 648-661.	4.4	77
26	SELECTION AND UPDATING OF PARAMETERS FOR AN ALUMINIUM SPACE-FRAME MODEL. Mechanical Systems and Signal Processing, 2000, 14, 923-944.	8.0	76
27	Active vibration suppression by pole-zero placement using measured receptances. Journal of Sound and Vibration, 2008, 311, 1391-1408.	3.9	73
28	Transonic aeroelastic simulation for instability searches and uncertainty analysis. Progress in Aerospace Sciences, 2011, 47, 392-423.	12.1	69
29	Friction-induced vibration of an elastic slider on a vibrating disc. International Journal of Mechanical Sciences, 1999, 41, 325-336.	6.7	66
30	Multiple-input active vibration control by partial pole placement using the method of receptances. Mechanical Systems and Signal Processing, 2013, 40, 727-735.	8.0	66
31	Assignment of natural frequencies by an added mass and one or more springs. Mechanical Systems and Signal Processing, 2004, 18, 263-289.	8.0	65
32	Identification of nonlinear bolted lap-joint parameters by force-state mapping. International Journal of Solids and Structures, 2007, 44, 8087-8105.	2.7	65
33	Modelling and updating of large surface-to-surface joints in the AWE-MACE structure. Mechanical Systems and Signal Processing, 2006, 20, 868-880.	8.0	64
34	Shape features and finite element model updating from full-field strain data. International Journal of Solids and Structures, 2011, 48, 1644-1657.	2.7	64
35	A methodology for the determination of dynamic instabilities in a car disc brake. International Journal of Vehicle Design, 2000, 23, 241.	0.3	61
36	Robust pole placement in structures by the method of receptances. Mechanical Systems and Signal Processing, 2011, 25, 112-122.	8.0	61

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37	Stochastic model updating: Part 2 application to a set of physical structures. <i>Mechanical Systems and Signal Processing</i> , 2006, 20, 2171-2185.	8.0	60
38	Sensitivity or Bayesian model updating: a comparison of techniques using the DLR AIRMOD test data. <i>Archive of Applied Mechanics</i> , 2017, 87, 905-925.	2.2	60
39	AN INVERSE METHOD FOR THE ASSIGNMENT OF VIBRATION NODES. <i>Mechanical Systems and Signal Processing</i> , 2001, 15, 87-100.	8.0	59
40	Vibration mode shape recognition using image processing. <i>Journal of Sound and Vibration</i> , 2009, 326, 909-938.	3.9	59
41	Partial pole placement with time delay in structures using the receptance and the system matrices. <i>Linear Algebra and Its Applications</i> , 2011, 434, 1689-1696.	0.9	59
42	Structural modification. Part 1: rotational receptances. <i>Journal of Sound and Vibration</i> , 2005, 284, 249-265.	3.9	57
43	Structural modification. Part 2: assignment of natural frequencies and antiresonances by an added beam. <i>Journal of Sound and Vibration</i> , 2005, 284, 267-281.	3.9	56
44	Vibration of a beam excited by a moving oscillator considering separation and reattachment. <i>Journal of Sound and Vibration</i> , 2008, 310, 1128-1140.	3.9	56
45	Partial pole placement in structures by the method of receptances: Theory and experiments. <i>Journal of Sound and Vibration</i> , 2010, 329, 5017-5035.	3.9	56
46	Connecting Bayesian and frequentist quantification of parameter uncertainty in system identification. <i>Mechanical Systems and Signal Processing</i> , 2012, 29, 328-342.	8.0	55
47	Uncertainty law in ambient modal identification Part I: Theory. <i>Mechanical Systems and Signal Processing</i> , 2014, 48, 15-33.	8.0	54
48	Measured dynamic properties for FRP footbridges and their critical comparison against structures made of conventional construction materials. <i>Composite Structures</i> , 2019, 223, 110956.	5.8	54
49	Bayesian operational modal analysis of Jiangyin Yangtze River Bridge. <i>Mechanical Systems and Signal Processing</i> , 2018, 110, 210-230.	8.0	53
50	A multivariate interval approach for inverse uncertainty quantification with limited experimental data. <i>Mechanical Systems and Signal Processing</i> , 2019, 118, 534-548.	8.0	52
51	Propagation of structural uncertainty to linear aeroelastic stability. <i>Computers and Structures</i> , 2010, 88, 223-236.	4.4	49
52	Parameter selection for model updating with global sensitivity analysis. <i>Mechanical Systems and Signal Processing</i> , 2019, 115, 483-496.	8.0	49
53	An assessment of damping identification methods. <i>Journal of Sound and Vibration</i> , 2009, 323, 662-676.	3.9	47
54	State feedback control with time delay. <i>Mechanical Systems and Signal Processing</i> , 2009, 23, 1940-1945.	8.0	46

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55	Assignment of eigenvalue sensitivities from receptance measurements. <i>Mechanical Systems and Signal Processing</i> , 2009, 23, 1931-1939.	8.0	45
56	Vibration Nodes, and the Cancellation of Poles and Zeros by Unit-Rank Modifications to Structures. <i>Journal of Sound and Vibration</i> , 1999, 222, 833-851.	3.9	43
57	BOUNDARY CONDITION IDENTIFICATION BY SOLVING CHARACTERISTIC EQUATIONS. <i>Journal of Sound and Vibration</i> , 2001, 247, 755-763.	3.9	43
58	Assessing uncertainty in operational modal analysis incorporating multiple setups using a Bayesian approach. <i>Structural Control and Health Monitoring</i> , 2015, 22, 395-416.	4.0	43
59	Understanding and managing identification uncertainty of close modes in operational modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2021, 147, 107018.	8.0	42
60	A state-of-the-art review on theory and engineering applications of eigenvalue and eigenvector derivatives. <i>Mechanical Systems and Signal Processing</i> , 2020, 138, 106536.	8.0	40
61	Structural modification of a helicopter tailcone. <i>Journal of Sound and Vibration</i> , 2006, 298, 366-384.	3.9	39
62	Uncertainty law in ambient modal identification—Part II: Implication and field verification. <i>Mechanical Systems and Signal Processing</i> , 2014, 48, 34-48.	8.0	39
63	On the treatment of ill-conditioning in spatial parameter estimation from measured vibration data. <i>Mechanical Systems and Signal Processing</i> , 1991, 5, 139-154.	8.0	38
64	MODEL UPDATING USING ROBUST ESTIMATION. <i>Mechanical Systems and Signal Processing</i> , 2002, 16, 169-183.	8.0	38
65	The large displacements and dynamic stability of springs using helical finite elements. <i>International Journal of Mechanical Sciences</i> , 1982, 24, 547-558.	6.7	33
66	A comparison of two stochastic model updating methods using the DLR AIRMOD test structure. <i>Mechanical Systems and Signal Processing</i> , 2015, 52-53, 105-114.	8.0	33
67	Quantifying and managing uncertainty in operational modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2018, 102, 139-157.	8.0	33
68	Experimental investigations of a multi-span flexible structure subjected to moving masses. <i>Journal of Sound and Vibration</i> , 2011, 330, 2004-2016.	3.9	30
69	Guidelines for the implementation of the CWELD and ACM2 spot weld models in structural dynamics. <i>Finite Elements in Analysis and Design</i> , 2004, 41, 193-210.	3.2	28
70	Experimental Nonlinear Control for Flutter Suppression in a Nonlinear Aeroelastic System. <i>Journal of Guidance, Control, and Dynamics</i> , 2017, 40, 1925-1938.	2.8	24
71	Full-Scale Validation of Dynamic Wind Load on a Super-Tall Building under Strong Wind. <i>Journal of Structural Engineering</i> , 2012, 138, 1161-1172.	3.4	23
72	Identification of nth-power velocity damping. <i>Journal of Sound and Vibration</i> , 1986, 105, 309-319.	3.9	22

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73	Clustering of Parameter Sensitivities: Examples from a Helicopter Airframe Model Updating Exercise. Shock and Vibration, 2009, 16, 75-87.	0.6	21
74	Bayesian operational modal analysis with multiple setups and multiple (possibly close) modes. Mechanical Systems and Signal Processing, 2021, 150, 107261.	8.0	21
75	Parameter selection and covariance updating. Mechanical Systems and Signal Processing, 2016, 70-71, 269-283.	8.0	20
76	Two new finite element contact algorithms. Computers and Structures, 1989, 32, 137-144.	4.4	19
77	Fuzzy finite element model updating of the DLR AIRMOD test structure. Applied Mathematical Modelling, 2017, 52, 512-526.	4.2	19
78	Theory for the estimation of structural vibration parameters from incomplete data. AIAA Journal, 1990, 28, 559-561.	2.6	18
79	A numerical-analytical combined method for vibration of a beam excited by a moving flexible body. International Journal for Numerical Methods in Engineering, 2007, 72, 1181-1191.	2.8	18
80	Adaptive moment descriptors for full-field strain and displacement measurements. Journal of Strain Analysis for Engineering Design, 2013, 48, 16-35.	1.8	18
81	Compressed sensing for OMA using full-field vibration images. Mechanical Systems and Signal Processing, 2019, 129, 394-406.	8.0	18
82	Receptance-based robust eigenstructure assignment. Mechanical Systems and Signal Processing, 2020, 140, 106697.	8.0	18
83	RESULTS OBTAINED BY MINIMISING NATURAL-FREQUENCY ERRORS AND USING PHYSICAL REASONING. Mechanical Systems and Signal Processing, 2003, 17, 39-46.	8.0	17
84	An Overview of the Receptance Method in Active Vibration Control. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 1174-1178.	0.4	16
85	The generalized Vincent circle in vibration suppression. Journal of Sound and Vibration, 2006, 292, 661-675.	3.9	15
86	Analysis of displacement fields from a high-speed impact using shape descriptors. Journal of Strain Analysis for Engineering Design, 2014, 49, 212-223.	1.8	15
87	Uncertainty quantification in DIC with Kriging regression. Optics and Lasers in Engineering, 2016, 78, 182-195.	3.8	15
88	Robust passivity-based continuous sliding-mode control for under-actuated nonlinear wing sections. Aerospace Science and Technology, 2017, 60, 9-19.	4.8	15
89	Frequency response function-based explicit framework for dynamic identification in human-structure systems. Journal of Sound and Vibration, 2018, 422, 453-470.	3.9	15
90	A method for improving finite element models by using experimental data: Application and implications for vibration monitoring. International Journal of Mechanical Sciences, 1990, 32, 191-203.	6.7	14

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91	FICTITIOUS MODIFICATIONS FOR THE SEPARATION OF CLOSE MODES. Mechanical Systems and Signal Processing, 2002, 16, 741-755.	8.0	14
92	Asymptotic identification uncertainty of close modes in Bayesian operational modal analysis. Mechanical Systems and Signal Processing, 2019, 133, 106273.	8.0	14
93	High-Bandwidth Morphing Actuator for Aeroelastic Model Control. Aerospace, 2019, 6, 13.	2.2	14
94	Vibration of a continuous beam with multiple elastic supports excited by a moving two-axle system with separation. Meccanica, 2009, 44, 293-303.	2.0	13
95	Feedback linearisation of nonlinear vibration problems: A new formulation by the method of receptances. Mechanical Systems and Signal Processing, 2018, 98, 1056-1068.	8.0	13
96	Basis-updating for data compression of displacement maps from dynamic DIC measurements. Mechanical Systems and Signal Processing, 2019, 115, 405-417.	8.0	13
97	Multiple-Input Multiple-Output Experimental Aeroelastic Control Using a Receptance-Based Method. AIAA Journal, 2019, 57, 3066-3077.	2.6	13
98	Pole placement in uncertain dynamic systems by variance minimisation. Mechanical Systems and Signal Processing, 2019, 127, 290-305.	8.0	13
99	An instrumental variable method for the estimation of mass, stiffness and damping parameters from measured frequency response functions. Mechanical Systems and Signal Processing, 1988, 2, 379-390.	8.0	12
100	ON POLE-ZERO PLACEMENT BY UNIT-RANK MODIFICATION. Mechanical Systems and Signal Processing, 2003, 17, 611-633.	8.0	12
101	Subsystem identification in structures with a human occupant based on composite frequency response functions. Mechanical Systems and Signal Processing, 2019, 120, 290-307.	8.0	12
102	POLE-ZERO CANCELLATION IN STRUCTURES: REPEATED ROOTS. Journal of Sound and Vibration, 2000, 231, 219-231.	3.9	11
103	An Inverse Method to Assign Receptances by Using Classical Vibration Absorbers. JVC/Journal of Vibration and Control, 2009, 15, 53-84.	2.6	11
104	Aeroelastic Systems with Softening Nonlinearity. AIAA Journal, 2014, 52, 1915-1927.	2.6	11
105	A Method for Determining Model-Structure Errors and for Locating Damage in Vibrating Systems. Meccanica, 1999, 34, 153-166.	2.0	10
106	Block-decoupling vibration control using eigenstructure assignment. Mechanical Systems and Signal Processing, 2016, 74, 11-28.	8.0	10
107	Field measurement and wind tunnel experimental investigation of a supertall building with closely spaced modes under typhoon Mangkhut. Journal of Wind Engineering and Industrial Aerodynamics, 2022, 226, 105033.	3.9	10
108	Warping torsion in thin-walled open section beams using the semiloof beam element. International Journal for Numerical Methods in Engineering, 1988, 26, 231-243.	2.8	9

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109	Improving Spot Weld Models in Structural Dynamics. , 2003, , 379.		9
110	Asymptotic identification uncertainty of well-separated modes in operational modal analysis with multiple setups. Mechanical Systems and Signal Processing, 2021, 152, 107382.	8.0	9
111	Identification of combined viscous and Coulomb friction - a numerical comparison of least-squares algorithms. Transactions of the Institute of Measurement and Control, 1986, 8, 9-16.	1.7	8
112	Feedback Linearization in Systems with Nonsmooth Nonlinearities. Journal of Guidance, Control, and Dynamics, 2016, 39, 814-825.	2.8	8
113	Experimental direct spatial damping identification by the Stabilised Layers Method. Journal of Sound and Vibration, 2018, 437, 325-339.	3.9	8
114	Construction of Shape Features for the Representation of Full-Field Displacement/Strain Data. Applied Mechanics and Materials, 0, 24-25, 365-370.	0.2	7
115	The minimum norm multi-input multi-output receptance method for partial pole placement. Mechanical Systems and Signal Processing, 2019, 129, 437-448.	8.0	7
116	Aeroelastic stability analysis using stochastic structural modifications. Journal of Sound and Vibration, 2020, 477, 115333.	3.9	7
117	Identifying modal properties of trees with Bayesian inference. Agricultural and Forest Meteorology, 2022, 316, 108804.	4.8	7
118	Image Analysis for Full-Field Displacement/Strain Data: Method and Applications. Applied Mechanics and Materials, 0, 70, 39-44.	0.2	6
119	Vibration Performance of Two FRP Footbridge Structures in the United Kingdom. , 2017, , .		6
120	Geometric stiffness of thin-walled open section beams using a semiloof beam formulation. International Journal for Numerical Methods in Engineering, 1988, 26, 2267-2278.	2.8	5
121	Full-field digital image correlation with Kriging regression. Optics and Lasers in Engineering, 2015, 67, 105-115.	3.8	5
122	Model Updating Strategy of the DLR-AIRMOD Test Structure. Procedia Engineering, 2017, 199, 978-983.	1.2	5
123	Experimental feedback linearisation of a vibrating system with a non-smooth nonlinearity. Journal of Sound and Vibration, 2018, 416, 192-212.	3.9	5
124	Experimental feedback linearisation of a non-smooth nonlinear system by the method of receptances. Mathematics and Mechanics of Solids, 2019, 24, 465-482.	2.4	5
125	Ambient vibration testing and operational modal analysis of monopole telecoms structures. Journal of Civil Structural Health Monitoring, 2021, 11, 1077.	3.9	5
126	Uncertainty quantification in Bayesian operational modal analysis with multiple modes and multiple setups. Mechanical Systems and Signal Processing, 2022, 164, 108205.	8.0	5

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127	On the treatment of discretisation errors in finite element model updating. Mechanical Systems and Signal Processing, 1995, 9, 101-112.	8.0	4
128	Image decomposition and uncertainty quantification for the assessment of manufacturing tolerances in stress analysis. Journal of Strain Analysis for Engineering Design, 2014, 49, 618-631.	1.8	4
129	Estimation of mass, damping and stiffness parameters in mechanical vibrating structures. Transactions of the Institute of Measurement and Control, 1989, 11, 249-255.	1.7	3
130	Application of High Speed Image Correlation for Measurement of Mode Shapes of a Car Bonnet. Applied Mechanics and Materials, 0, 70, 45-50.	0.2	3
131	Corneal topography matching by iterative registration. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2014, 228, 1154-1167.	1.8	3
132	Output-only full-field modal testing. Procedia Engineering, 2017, 199, 423-428.	1.2	3
133	Model Updating Using Shape Descriptors from Full-Field Images. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 425-436.	0.5	3
134	Model Updating. , 2020, , 1-53.		3
135	Eigenvalue Assignment Problems in Vibration Using Measured Receptances: Passive Modification and Active Control. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2011, , 179-202.	0.6	3
136	$\langle \text{math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi mathvariant="script"} \rangle H \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ -optimal vibration control using receptance-based regional eigenvalue assignment. Mechanical Systems and Signal Processing, 2022, 167, 108591.	8.0	3
137	Fast computation of uncertainty lower bounds for state-space model-based operational modal analysis. Mechanical Systems and Signal Processing, 2022, 169, 108759.	8.0	3
138	Editorial: Recent advances in stochastic model updating. Mechanical Systems and Signal Processing, 2022, 172, 108971.	8.0	3
139	FINITE ELEMENT CONNECTIVITIES FROM VIBRATION MEASUREMENTS. Mechanical Systems and Signal Processing, 1999, 13, 367-374.	8.0	2
140	The Receptance Method in Active Vibration Control. , 2006, , .		2
141	Model Updating. , 2021, , 1-53.		2
142	Sensitivity Analysis of the Small Specimen Bulge Test by the Finite Element and the Taguchi Methods. Journal of Testing and Evaluation, 2001, 29, 277-284.	0.7	2
143	Dynamic properties of impact hammer operator and their influence on dynamics of lightweight structures. Journal of Sound and Vibration, 2022, 529, 116932.	3.9	2
144	Measuring configuration of multi-setup ambient vibration test. Mechanical Systems and Signal Processing, 2022, 175, 109153.	8.0	2

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145	Complex-Damped Dynamic Systems in the Time and Frequency Domains. Shock and Vibration, 2004, 11, 209-225.	0.6	1
146	Minimum Relative Entropy Criterion for Damage Detection and Location. Key Engineering Materials, 2007, 347, 421-426.	0.4	1
147	Paper XI(i) Identification of fluid-film bearing dynamics: time-domain or frequency-domain?. Tribology Series, 1987, 11, 339-346.	0.1	0
148	Application of the Perturbation Method With Parameter Weighting Matrix Assignments for Estimating Variability in a Set of Nominally Identical Welded Structures. , 2010, , .		0
149	Use of Integrated Simulation and Experimentation to Quantify Impact Damage. Applied Mechanics and Materials, 0, 70, 51-56.	0.2	0
150	Model Updating. , 2022, , 897-949.		0