

Siu-Kui Au

List of Publications by Year in descending order

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141
papers

9,358
citations

47006

47
h-index

38395

95
g-index

146
all docs

146
docs citations

146
times ranked

3308
citing authors

#	ARTICLE	IF	CITATIONS
1	Estimation of small failure probabilities in high dimensions by subset simulation. Probabilistic Engineering Mechanics, 2001, 16, 263-277.	2.7	1,722
2	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
3	A new adaptive importance sampling scheme for reliability calculations. Structural Safety, 1999, 21, 135-158.	5.3	449
4	Bayesian Probabilistic Approach to Structural Health Monitoring. Journal of Engineering Mechanics - ASCE, 2000, 126, 738-745.	2.9	326
5	Subset Simulation and its Application to Seismic Risk Based on Dynamic Analysis. Journal of Engineering Mechanics - ASCE, 2003, 129, 901-917.	2.9	313
6	Important sampling in high dimensions. Structural Safety, 2003, 25, 139-163.	5.3	287
7	Entropy-Based Optimal Sensor Location for Structural Model Updating. JVC/Journal of Vibration and Control, 2000, 6, 781-800.	2.6	276
8	Practical reliability analysis of slope stability by advanced Monte Carlo simulations in a spreadsheet. Canadian Geotechnical Journal, 2011, 48, 162-172.	2.8	258
9	Reliability-based design sensitivity by efficient simulation. Computers and Structures, 2005, 83, 1048-1061.	4.4	256
10	First excursion probabilities for linear systems by very efficient importance sampling. Probabilistic Engineering Mechanics, 2001, 16, 193-207.	2.7	223
11	Application of subset simulation methods to reliability benchmark problems. Structural Safety, 2007, 29, 183-193.	5.3	213
12	Fast Bayesian FFT Method for Ambient Modal Identification with Separated Modes. Journal of Engineering Mechanics - ASCE, 2011, 137, 214-226.	2.9	177
13	Bayesian approach for probabilistic characterization of sand friction angles. Engineering Geology, 2010, 114, 354-363.	6.3	166
14	Bayesian operational modal analysis: Theory, computation, practice. Computers and Structures, 2013, 126, 3-14.	4.4	157
15	Efficient Monte Carlo Simulation of parameter sensitivity in probabilistic slope stability analysis. Computers and Geotechnics, 2010, 37, 1015-1022.	4.7	150
16	Bayesian post-processor and other enhancements of Subset Simulation for estimating failure probabilities in high dimensions. Computers and Structures, 2012, 92-93, 283-296.	4.4	148
17	Fast Bayesian ambient modal identification in the frequency domain, Part I: Posterior most probable value. Mechanical Systems and Signal Processing, 2012, 26, 60-75.	8.0	136
18	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

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19	Reliability estimation for dynamical systems subject to stochastic excitation using subset simulation with splitting. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2005, 194, 1557-1579.	6.6	118
20	Monitoring Structural Health Using a Probabilistic Measure. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2001, 16, 1-11.	9.8	114
21	Fast Bayesian ambient modal identification in the frequency domain, Part II: Posterior uncertainty. <i>Mechanical Systems and Signal Processing</i> , 2012, 26, 76-90.	8.0	113
22	Two-Stage Structural Health Monitoring Approach for Phase I Benchmark Studies. <i>Journal of Engineering Mechanics - ASCE</i> , 2004, 130, 16-33.	2.9	109
23	Three-dimensional slope reliability and risk assessment using auxiliary random finite element method. <i>Computers and Geotechnics</i> , 2016, 79, 146-158.	4.7	109
24	Hybrid Subset Simulation method for reliability estimation of dynamical systems subject to stochastic excitation. <i>Probabilistic Engineering Mechanics</i> , 2005, 20, 199-214.	2.7	87
25	Expanded Reliability-Based Design Approach for Drilled Shafts. <i>Journal of Geotechnical and Geoenvironmental Engineering - ASCE</i> , 2011, 137, 140-149.	3.0	85
26	Analyzing the Sensitivity of WRF's Single-Layer Urban Canopy Model to Parameter Uncertainty Using Advanced Monte Carlo Simulation. <i>Journal of Applied Meteorology and Climatology</i> , 2011, 50, 1795-1814.	1.5	84
27	Field observations on modal properties of two tall buildings under strong wind. <i>Journal of Wind Engineering and Industrial Aerodynamics</i> , 2012, 101, 12-23.	3.9	78
28	Implementing advanced Monte Carlo simulation under spreadsheet environment. <i>Structural Safety</i> , 2010, 32, 281-292.	5.3	77
29	Reliability of uncertain dynamical systems with multiple design points. <i>Structural Safety</i> , 1999, 21, 113-133.	5.3	67
30	Ambient modal identification of a primary and secondary structure by Fast Bayesian FFT method. <i>Mechanical Systems and Signal Processing</i> , 2012, 28, 280-296.	8.0	67
31	System reliability analysis of slope stability using generalized Subset Simulation. <i>Applied Mathematical Modelling</i> , 2017, 46, 650-664.	4.2	65
32	Compartment fire risk analysis by advanced Monte Carlo simulation. <i>Engineering Structures</i> , 2007, 29, 2381-2390.	5.3	62
33	Assembling mode shapes by least squares. <i>Mechanical Systems and Signal Processing</i> , 2011, 25, 163-179.	8.0	61
34	Structural damage detection and assessment by adaptive Markov chain Monte Carlo simulation. <i>Structural Control and Health Monitoring</i> , 2004, 11, 327-347.	4.0	60
35	Design optimization using Subset Simulation algorithm. <i>Structural Safety</i> , 2010, 32, 384-392.	5.3	60
36	Fast Bayesian Ambient Modal Identification Incorporating Multiple Setups. <i>Journal of Engineering Mechanics - ASCE</i> , 2012, 138, 800-815.	2.9	60

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37	Seismic Risk Assessment and Mitigation of Water Supply Systems. <i>Earthquake Spectra</i> , 2010, 26, 257-274.	3.1	59
38	Optimal sensor configuration of a typical transmission tower for the purpose of structural model updating. <i>Structural Control and Health Monitoring</i> , 2011, 18, 305-320.	4.0	59
39	Fundamental two-stage formulation for Bayesian system identification, Part I: General theory. <i>Mechanical Systems and Signal Processing</i> , 2016, 66-67, 31-42.	8.0	57
40	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
41	Uncertainty law in ambient modal identification—Part I: Theory. <i>Mechanical Systems and Signal Processing</i> , 2014, 48, 15-33.	8.0	54
42	Bayesian operational modal analysis of Jiangyin Yangtze River Bridge. <i>Mechanical Systems and Signal Processing</i> , 2018, 110, 210-230.	8.0	53
43	Bayesian updating and model class selection with Subset Simulation. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2017, 317, 1102-1121.	6.6	52
44	Markov chain Monte Carlo-based Bayesian method for structural model updating and damage detection. <i>Structural Control and Health Monitoring</i> , 2018, 25, e2140.	4.0	51
45	Full-scale dynamic testing and modal identification of a coupled floor slab system. <i>Engineering Structures</i> , 2012, 37, 167-178.	5.3	49
46	On assessing the posterior mode shape uncertainty in ambient modal identification. <i>Probabilistic Engineering Mechanics</i> , 2011, 26, 427-434.	2.7	48
47	Development of a practical algorithm for Bayesian model updating of a coupled slab system utilizing field test data. <i>Engineering Structures</i> , 2014, 79, 182-194.	5.3	48
48	Probabilistic Failure Analysis by Importance Sampling Markov Chain Simulation. <i>Journal of Engineering Mechanics - ASCE</i> , 2004, 130, 303-311.	2.9	47
49	Extracting Rare Failure Events in Composite System Reliability Evaluation Via Subset Simulation. <i>IEEE Transactions on Power Systems</i> , 2015, 30, 753-762.	6.5	45
50	Rare event simulation in finite-infinite dimensional space. <i>Reliability Engineering and System Safety</i> , 2016, 148, 67-77.	8.9	44
51	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
52	Fast Bayesian approach for modal identification using free vibration data, Part I – Most probable value. <i>Mechanical Systems and Signal Processing</i> , 2016, 70-71, 209-220.	8.0	42
53	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
54	Operational Modal Analysis. , 2017, , .		41

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55	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
56	Determination of site-specific soil-water characteristic curve from a limited number of test data – A Bayesian perspective. <i>Geoscience Frontiers</i> , 2018, 9, 1665-1677.	8.4	38
57	Effect of Seismic Risk on Lifetime Property Value. <i>Earthquake Spectra</i> , 2004, 20, 1211-1237.	3.1	37
58	Augmenting approximate solutions for consistent reliability analysis. <i>Probabilistic Engineering Mechanics</i> , 2007, 22, 77-87.	2.7	36
59	An expectation-maximization algorithm for Bayesian operational modal analysis with multiple (possibly close) modes. <i>Mechanical Systems and Signal Processing</i> , 2019, 132, 490-511.	8.0	34
60	Quantifying and managing uncertainty in operational modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2018, 102, 139-157.	8.0	33
61	Spatial distribution of water supply reliability and critical links of water supply to crucial water consumers under an earthquake. <i>Reliability Engineering and System Safety</i> , 2009, 94, 534-541.	8.9	30
62	Fast Bayesian modal identification of structures using known single-input forced vibration data. <i>Structural Control and Health Monitoring</i> , 2014, 21, 381-402.	4.0	29
63	Fundamental two-stage formulation for Bayesian system identification, Part II: Application to ambient vibration data. <i>Mechanical Systems and Signal Processing</i> , 2016, 66-67, 43-61.	8.0	28
64	On MCMC algorithm for Subset Simulation. <i>Probabilistic Engineering Mechanics</i> , 2016, 43, 117-120.	2.7	27
65	Bayesian parameter identification of hysteretic behavior of composite walls. <i>Probabilistic Engineering Mechanics</i> , 2013, 34, 101-109.	2.7	25
66	Heat transfer analysis using a Green's function approach for uniformly insulated steel members subjected to fire. <i>Engineering Structures</i> , 2005, 27, 1551-1562.	5.3	24
67	Fast Bayesian approach for modal identification using free vibration data, Part II – Posterior uncertainty and application. <i>Mechanical Systems and Signal Processing</i> , 2016, 70-71, 221-244.	8.0	24
68	Uncertainty Quantification in Estimating Critical Spacecraft Component Temperatures. <i>Journal of Thermophysics and Heat Transfer</i> , 2007, 21, 422-430.	1.6	23
69	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
70	Insights on the Bayesian spectral density method for operational modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2016, 66-67, 1-12.	8.0	23
71	Bayesian operational modal analysis with multiple setups and multiple (possibly close) modes. <i>Mechanical Systems and Signal Processing</i> , 2021, 150, 107261.	8.0	21
72	Bayesian operational modal analysis of offshore rock lighthouses: Close modes, alignment, symmetry and uncertainty. <i>Mechanical Systems and Signal Processing</i> , 2019, 133, 106306.	8.0	20

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73	Critical excitation of sdof elasto-plastic systems. Journal of Sound and Vibration, 2006, 296, 714-733.	3.9	18
74	Bayesian operational modal analysis with asynchronous data, part I: Most probable value. Mechanical Systems and Signal Processing, 2018, 98, 652-666.	8.0	18
75	Bayesian operational modal analysis with asynchronous data, Part II: Posterior uncertainty. Mechanical Systems and Signal Processing, 2018, 98, 920-935.	8.0	18
76	Application of saddlepoint approximation in reliability analysis of dynamic systems. Earthquake Engineering and Engineering Vibration, 2007, 6, 391-400.	2.3	17
77	Bayesian data driven model for uncertain modal properties identified from operational modal analysis. Mechanical Systems and Signal Processing, 2020, 136, 106511.	8.0	17
78	Two-stage Bayesian system identification using Gaussian discrepancy model. Structural Health Monitoring, 2021, 20, 580-595.	7.5	17
79	Reliability sensitivity analysis of geotechnical monitoring variables using Bayesian updating. Engineering Geology, 2018, 245, 130-140.	6.3	16
80	Operational modal analysis of a long-span suspension bridge under different earthquake events. Earthquake and Structures, 2015, 8, 859-887.	1.0	15
81	Bayesian Approach in the Modal Analysis of Electromechanical Oscillations. IEEE Transactions on Power Systems, 2017, 32, 316-325.	6.5	14
82	Asymptotic identification uncertainty of close modes in Bayesian operational modal analysis. Mechanical Systems and Signal Processing, 2019, 133, 106273.	8.0	14
83	First passage probability of elasto-plastic systems by importance sampling with adapted process. Probabilistic Engineering Mechanics, 2008, 23, 114-124.	2.7	13
84	Spectral characteristics of asynchronous data in operational modal analysis. Structural Control and Health Monitoring, 2017, 24, e1981.	4.0	13
85	Operational modal analysis of an eight-storey building with asynchronous data incorporating multiple setups. Engineering Structures, 2018, 165, 50-62.	5.3	13
86	Bayesian operational modal analysis with buried modes. Mechanical Systems and Signal Processing, 2019, 121, 246-263.	8.0	13
87	Uncertainty Quantification in Conceptual Design via an Advanced Monte Carlo Method. Journal of Aerospace Computing, Information, and Communication, 2007, 4, 902-917.	0.8	12
88	Reliability Analysis of Single-Degree-of-Freedom Elastoplastic Systems. I: Critical Excitations. Journal of Engineering Mechanics - ASCE, 2007, 133, 1072-1080.	2.9	12
89	A Gibbs sampling algorithm for structural modal identification under seismic excitation. Earthquake Engineering and Structural Dynamics, 2018, 47, 2735-2755.	4.4	12
90	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

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91	Efficient Estimation of Probability of Conflict Between Air Traffic Using Subset Simulation. IEEE Transactions on Aerospace and Electronic Systems, 2019, 55, 2719-2742.	4.7	9
92	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
93	Model validity and frequency band selection in operational modal analysis. Mechanical Systems and Signal Processing, 2016, 81, 339-359.	8.0	8
94	Probabilistic Model for Modal Properties Based on Operational Modal Analysis. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2016, 2, .	1.7	8
95	Calculation of Hessian under constraints with applications to Bayesian system identification. Computer Methods in Applied Mechanics and Engineering, 2017, 323, 373-388.	6.6	8
96	Optimised ambient vibration testing of long span bridges. Procedia Engineering, 2017, 199, 38-47.	1.2	8
97	Mode shape scaling and implications in modal identification with known input. Engineering Structures, 2018, 156, 411-416.	5.3	8
98	Robustness of Subset Simulation to Functional Forms of Limit State Functions in System Reliability Analysis: Revisiting and Improvement. IEEE Transactions on Reliability, 2018, 67, 66-78.	4.6	8
99	Posterior uncertainty, asymptotic law and Cram�r-Rao bound. Structural Control and Health Monitoring, 2018, 25, e21113.	4.0	7
100	Identifying modal properties of trees with Bayesian inference. Agricultural and Forest Meteorology, 2022, 316, 108804.	4.8	7
101	<title>Entropy-based optimal sensor location for structural damage detection</title> . , 1998, 3325, 161.		6
102	Sub-critical excitations of SDOF elasto-plastic systems. International Journal of Non-Linear Mechanics, 2006, 41, 1095-1108.	2.6	6
103	Discussion of paper by F. Miao and M. Ghosn "Modified subset simulation method for reliability analysis of structural systems"; Structural Safety, 33:251-260, 2011. Structural Safety, 2012, 34, 379-380.	5.3	6
104	Importance sampling for elasto-plastic systems using adapted process with deterministic control. International Journal of Non-Linear Mechanics, 2009, 44, 190-199.	2.6	5
105	Instrument noise calibration with arbitrary sensor orientations. Mechanical Systems and Signal Processing, 2019, 117, 879-892.	8.0	5
106	Ambient vibration testing and operational modal analysis of monopole telecoms structures. Journal of Civil Structural Health Monitoring, 2021, 11, 1077.	3.9	5
107	Uncertainty quantification in Bayesian operational modal analysis with multiple modes and multiple setups. Mechanical Systems and Signal Processing, 2022, 164, 108205.	8.0	5
108	Bayesian Inference. , 2017, , 265-289.		5

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109	Stochastic control approach to reliability of elasto-plastic structures. Structural Engineering and Mechanics, 2009, 32, 21-36.	1.0	5
110	Modulation of stochastic diffusion by wave motion. Probabilistic Engineering Mechanics, 2011, 26, 142-147.	2.7	4
111	Advances in Simulation-Based Uncertainty Quantification and Reliability Analysis. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2019, 5, .	1.7	4
112	Achievable precision of close modes in operational modal analysis: Wide band theory. Mechanical Systems and Signal Processing, 2021, 147, 107016.	8.0	4
113	CPT-Based Probabilistic Characterization of Effective Friction Angle of Sand. , 2011, , .		3
114	OPERATIONAL MODAL ANALYSIS OF BRODIE TOWER USING A BAYESIAN APPROACH. , 2017, , .		3
115	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
116	Multi-Objective Optimization Under Uncertainty of Satellite Systems Via Simulated Annealing. , 2008, , .		2
117	Reliability analysis using a 'Taylor expansion-expected value' saddlepoint approximation. International Journal of Reliability and Safety, 2011, 5, 44.	0.2	2
118	Auxiliary Random Finite Element Method for Risk Assessment of 3-D Slope. , 2017, , .		2
119	Measuring configuration of multi-setup ambient vibration test. Mechanical Systems and Signal Processing, 2022, 175, 109153.	8.0	2
120	Discussion of "Redundancy Index of Lifeline Systems" by Masaru Hoshiya and Kinya Yamamoto. Journal of Engineering Mechanics - ASCE, 2003, 129, 1104-1104.	2.9	1
121	Field Measurement and Bayesian Modal Identification of a Primary-Secondary Structure. Procedia Engineering, 2011, 14, 2593-2600.	1.2	1
122	Theory and practice of Bayesian modal identification using ambient data. Journal of Japan Society of Civil Engineers Ser A2 (Applied Mechanics (AM)), 2012, 68, I_59-I_67.	0.1	1
123	Implementing Nataf transformation in a spreadsheet environment and application in reliability analysis. , 2013, , .		1
124	Bayesian approach in the modal analysis of electromechanical oscillations. , 2017, , .		1
125	Probabilistic Analysis Methodology for Thermal Protection System during Conceptual Design. Journal of Aerospace Engineering, 2019, 32, 04019085.	1.4	1
126	Bayesian modal identification method based on general coherence model for asynchronous ambient data. Mechanical Systems and Signal Processing, 2019, 132, 194-210.	8.0	1

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127	Bayesian Operational Modal Analysis. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2016, , 117-135.	0.6	1
128	Uncertainty Quantification in Estimating Critical Spacecraft Component Temperatures. , 2006, , .		0
129	Reliability Analysis of Single-Degree-of-Freedom Elastoplastic Systems. II: Suboptimal Excitations. Journal of Engineering Mechanics - ASCE, 2007, 133, 1081-1085.	2.9	0
130	Closure to "Reliability Analysis of Single-Degree-of-Freedom Elastoplastic Systems. I: Critical Excitations" by Siu-Kui Au, Heung-Fai Lam, and Ching-Tai Ng. Journal of Engineering Mechanics - ASCE, 2008, 134, 924-925.	2.9	0
131	Stochastic diffusion by progressive waves in turbulence. Journal of Hydrodynamics, 2010, 22, 588-593.	3.2	0
132	Field Measurement and Modal Identification of a Coupled Floor Slab System. Procedia Engineering, 2011, 14, 1318-1325.	1.2	0
133	Structural Model Updating of a Steel Truss Structure Utilizing Ambient Vibration Measurement. , 2014, , .		0
134	Extracting rare failure events in composite system reliability evaluation via subset simulation. , 2015, , .		0
135	Bayesian Operational Modal Analysis. , 2015, , 214-225.		0
136	Investigation of Operational Modal Identification of a Cable-Stayed Bridge Based on Bayesian Estimation Considering Stochastic Uncertainty. Journal of Japan Society of Civil Engineers Ser A2 (Applied Mechanics (AM)), 2016, 72, I_751-I_762.	0.1	0
137	Importance Sampling of Nonlinear Structures Using Adapted Process. Computational Methods in Applied Sciences (Springer), 2011, , 47-65.	0.3	0
138	Bayesian Operational Modal Analysis. , 2015, , 1-15.		0
139	Single Mode Problem. , 2017, , 365-390.		0
140	Multi-setup Problem. , 2017, , 419-451.		0
141	Ambient Data Modeling and Analysis. , 2017, , 225-262.		0