Costas Papadimitriou

List of Publications by Year
in descending order

133 papers	5,442 citations	87843 38 h-index	88593 70 g-index
144 all docs	144 docs citations	144 times ranked	2749 citing authors

#	Article	IF	Citations
1	Optimal sensor placement methodology for parametric identification of structural systems. Journal of Sound and Vibration, 2004, 278, 923-947.	2.1	336
2	A dual Kalman filter approach for state estimation via output-only acceleration measurements. Mechanical Systems and Signal Processing, 2015, 60-61, 866-886.	4.4	303
3	Entropy-Based Optimal Sensor Location for Structural Model Updating. JVC/Journal of Vibration and Control, 2000, 6, 781-800.	1.5	276
4	Updating robust reliability using structural test data. Probabilistic Engineering Mechanics, 2001, 16, 103-113.	1.3	227
5	Joint input-response estimation for structural systems based on reduced-order models and vibration data from a limited number of sensors. Mechanical Systems and Signal Processing, 2012, 29, 310-327.	4.4	203
6	Design Optimization of Quarter-car Models with Passive and Semi-active Suspensions under Random Road Excitation. JVC/Journal of Vibration and Control, 2005, 11, 581-606.	1.5	192
7	Hierarchical Bayesian model updating for structural identification. Mechanical Systems and Signal Processing, 2015, 64-65, 360-376.	4.4	182
8	The effect of prediction error correlation on optimal sensor placement in structural dynamics. Mechanical Systems and Signal Processing, 2012, 28, 105-127.	4.4	159
9	Bayesian uncertainty quantification and propagation in molecular dynamics simulations: A high performance computing framework. Journal of Chemical Physics, 2012, 137, 144103.	1.2	154
10	Sequential importance sampling for structural reliability analysis. Structural Safety, 2016, 62, 66-75.	2.8	149
11	Leakage detection in water pipe networks using a Bayesian probabilistic framework. Probabilistic Engineering Mechanics, 2003, 18, 315-327.	1.3	142
12	On prediction error correlation in Bayesian model updating. Journal of Sound and Vibration, 2013, 332, 4136-4152.	2.1	134
13	Fatigue predictions in entire body of metallic structures from a limited number of vibration sensors using Kalman filtering. Structural Control and Health Monitoring, 2011, 18, 554-573.	1.9	130
14	Component mode synthesis techniques for finite element model updating. Computers and Structures, 2013, 126, 15-28.	2.4	126
15	A probabilistic approach to structural model updating. Soil Dynamics and Earthquake Engineering, 1998, 17, 495-507.	1.9	124
16	Experimental validation of the Kalman-type filters for online and real-time state and input estimation. JVC/Journal of Vibration and Control, 2017, 23, 2494-2519.	1.5	102
17	Pareto optimal sensor locations for structural identification. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 1655-1673.	3.4	90
18	Î4U: A high performance computing framework for Bayesian uncertainty quantification of complex models. Journal of Computational Physics, 2015, 284, 1-21.	1.9	89

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19	X-TMCMC: Adaptive kriging for Bayesian inverse modeling. Computer Methods in Applied Mechanics and Engineering, 2015, 289, 409-428.	3.4	87
20	Bridge health monitoring system based on vibration measurements. Bulletin of Earthquake Engineering, 2009, 7, 469-483.	2.3	80
21	Optimal Sensor Placement Methodology for Identification with Unmeasured Excitation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2001, 123, 677-686.	0.9	73
22	Structural identification based on optimally weighted modal residuals. Mechanical Systems and Signal Processing, 2007, 21, 4-23.	4.4	71
23	Adaptive Kalman filters for nonlinear finite element model updating. Mechanical Systems and Signal Processing, 2020, 143, 106837.	4.4	68
24	Model-reduction techniques for Bayesian finite element model updating using dynamic response data. Computer Methods in Applied Mechanics and Engineering, 2014, 279, 301-324.	3.4	65
25	Input-state-parameter estimation of structural systems from limited output information. Mechanical Systems and Signal Processing, 2019, 126, 711-746.	4.4	65
26	Bayesian optimal estimation for output-only nonlinear system and damage identification of civil structures. Structural Control and Health Monitoring, 2018, 25, e2128.	1.9	64
27	Structural model updating and prediction variability using Pareto optimal models. Computer Methods in Applied Mechanics and Engineering, 2008, 198, 138-149.	3.4	59
28	Probabilistic hierarchical Bayesian framework for time-domain model updating and robust predictions. Mechanical Systems and Signal Processing, 2019, 123, 648-673.	4.4	55
29	Multi-criteria optimal structural design under uncertainty. Earthquake Engineering and Structural Dynamics, 1999, 28, 741-761.	2.5	53
30	Structural health monitoring and fatigue damage estimation using vibration measurements and finite element model updating. Structural Health Monitoring, 2019, 18, 1189-1206.	4.3	53
31	Optimal sensor placement for multi-setup modal analysis of structures. Journal of Sound and Vibration, 2017, 401, 214-232.	2.1	48
32	The use of updated robust reliability measures in stochastic dynamical systems. Computer Methods in Applied Mechanics and Engineering, 2013, 267, 293-317.	3.4	45
33	Sequential Bayesian estimation of state and input in dynamical systems using output-only measurements. Mechanical Systems and Signal Processing, 2019, 131, 659-688.	4.4	45
34	Accounting for amplitude of excitation in model updating through a hierarchical Bayesian approach: Application to a two-story reinforced concrete building. Mechanical Systems and Signal Processing, 2019, 123, 68-83.	4.4	43
35	Reliability sensitivity analysis of stochastic finite element models. Computer Methods in Applied Mechanics and Engineering, 2015, 296, 327-351.	3.4	41
36	Probabilistic damage identification of a designed 9-story building using modal data in the presence of modeling errors. Engineering Structures, 2017, 131, 542-552.	2.6	41

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37	Multi-objective framework for structural model identification. Earthquake Engineering and Structural Dynamics, 2005, 34, 665-685.	2.5	40
38	Data Driven, Predictive Molecular Dynamics for Nanoscale Flow Simulations under Uncertainty. Journal of Physical Chemistry B, 2013, 117, 14808-14816.	1.2	40
39	Implementation of an adaptive meta-model for Bayesian finite element model updating in time domain. Reliability Engineering and System Safety, 2017, 160, 174-190.	5.1	40
40	Moving resonance in nonlinear response to fully nonstationary stochastic ground motion. Probabilistic Engineering Mechanics, 1993, 8, 157-167.	1.3	39
41	Treatment of Unidentifiability in Structural Model Updating. Advances in Structural Engineering, 2000, 3, 19-39.	1.2	39
42	Bayesian inference for damage identification based on analytical probabilistic model of scattering coefficient estimators and ultrafast wave scattering simulation scheme. Journal of Sound and Vibration, 2020, 468, 115083.	2.1	38
43	Variability of updated finite element models and their predictions consistent with vibration measurements. Structural Control and Health Monitoring, 2012, 19, 630-654.	1.9	36
44	New Approximations for Reliability Integrals. Journal of Engineering Mechanics - ASCE, 1999, 125, 466-475.	1.6	35
45	Approximate analysis of response variability of uncertain linear systems. Probabilistic Engineering Mechanics, 1995, 10, 251-264.	1.3	33
46	Aerodynamic shape optimization for minimum robust drag and lift reliability constraint. Aerospace Science and Technology, 2016, 55, 24-33.	2.5	33
47	Hierarchical Bayesian operational modal analysis: Theory and computations. Mechanical Systems and Signal Processing, 2020, 140, 106663.	4.4	33
48	Optimal experimental design in stochastic structural dynamics. Probabilistic Engineering Mechanics, 2005, 20, 67-78.	1.3	30
49	Model-reduction techniques for reliability-based design problems of complex structural systems. Reliability Engineering and System Safety, 2016, 149, 204-217.	5.1	29
50	Bayesian optimal sensor placement for crack identification in structures using strain measurements. Structural Control and Health Monitoring, 2018, 25, e2137.	1.9	29
51	Structural identification of Egnatia Odos bridges based on ambient and earthquake induced vibrations. Bulletin of Earthquake Engineering, 2009, 7, 485-501.	2.3	26
52	An enhanced substructure coupling technique for dynamic re-analyses: Application to simulation-based problems. Computer Methods in Applied Mechanics and Engineering, 2016, 307, 215-234.	3.4	26
53	Data-driven inference of the reproduction number for COVID-19 before and after interventions for 51 European countries. Swiss Medical Weekly, 2020, 150, w20313.	0.8	26
54	Optimal sensor placement for artificialÂswimmers. Journal of Fluid Mechanics, 2020, 884, .	1.4	25

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55	Data-driven uncertainty quantification and propagation in structural dynamics through a hierarchical Bayesian framework. Probabilistic Engineering Mechanics, 2020, 60, 103047.	1.3	25
56	Bayesian uncertainty quantification and propagation for discrete element simulations of granular materials. Computer Methods in Applied Mechanics and Engineering, 2014, 282, 218-238.	3.4	24
57	A general substructure-based framework for input-state estimation using limited output measurements. Mechanical Systems and Signal Processing, 2021, 150, 107223.	4.4	24
58	Hierarchical Bayesian modeling framework for model updating and robust predictions in structural dynamics using modal features. Mechanical Systems and Signal Processing, 2022, 170, 108784.	4.4	23
59	Bayesian uncertainty quantification of turbulence models based on high-order adjoint. Computers and Fluids, 2015, 120, 82-97.	1.3	22
60	Modeling Error Estimation and Response Prediction of a 10-Story Building Model Through a Hierarchical Bayesian Model Updating Framework. Frontiers in Built Environment, 2019, 5, .	1.2	22
61	Accounting for Modeling Errors and Inherent Structural Variability through a Hierarchical Bayesian Model Updating Approach: An Overview. Sensors, 2020, 20, 3874.	2.1	22
62	Fusing heterogeneous data for the calibration of molecular dynamics force fields using hierarchical Bayesian models. Journal of Chemical Physics, 2016, 145, 244112.	1.2	21
63	A fast Bayesian inference scheme for identification of local structural properties of layered composites based on wave and finite element-assisted metamodeling strategy and ultrasound measurements. Mechanical Systems and Signal Processing, 2020, 143, 106802.	4.4	21
64	Bayesian Optimal Sensor Placement for Modal Identification of Civil Infrastructures. Journal of Smart Cities, 2017, 2, .	0.5	21
65	Bayesian identification of the tendon fascicleâ€™s structural composition using finite element models for helical geometries. Computer Methods in Applied Mechanics and Engineering, 2017, 313, 744-758.	3.4	20
66	Nonlinear model updating through a hierarchical Bayesian modeling framework. Computer Methods in Applied Mechanics and Engineering, 2022, 392, 114646.	3.4	20
67	Data driven inference for the repulsive exponent of the Lennard-Jones potential in molecular dynamics simulations. Scientific Reports, 2017, 7, 16576.	1.6	19
68	Bayesian Annealed Sequential Importance Sampling: An Unbiased Version of Transitional Markov Chain Monte Carlo. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering, 2018, 4, .	0.7	19
69	Bayesian Model-Updating Using Features of Modal Data: Application to the Metsovo Bridge. Journal of Sensor and Actuator Networks, 2020, 9, 27.	2.3	18
70	Optimal Sensor Placement for Reliable Virtual Sensing Using Modal Expansion and Information Theory. Sensors, 2021, 21, 3400.	2.1	18
71	Optimal sensor placement for parameter estimation and virtual sensing of strains on an offshore wind turbine considering sensor installation cost. Mechanical Systems and Signal Processing, 2022, 169, 108787.	4.4	18
72	Stochastic cumulant analysis of MDOF systems with polynomial-type nonlinearities. Probabilistic Engineering Mechanics, 1996, 11, 1-13.	1.3	17

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73	An analytical perspective on Bayesian uncertainty quantification and propagation in mode shape assembly. Mechanical Systems and Signal Processing, 2020, 135, 106376.	4.4	17
74	Optimal Flow Sensing for Schooling Swimmers. Biomimetics, 2020, 5, 10.	1.5	13
75	Optimal allocation of limited test resources for the quantification of COVID-19 infections. Swiss Medical Weekly, 2020, 150, w20445.	0.8	13
76	Approximate analysis of higher cumulants for multi-degree-of-freedom random vibration. Probabilistic Engineering Mechanics, 1994, 9, 71-82.	1.3	12
77	A new stationary PDF approximation for non-linear oscillators. International Journal of Non-Linear Mechanics, 2000, 35, 657-673.	1.4	12
78	OPTIMAL SENSOR PLACEMENT FOR THE ESTIMATION OF TURBULENCE MODEL PARAMETERS IN CFD. , 2015, 5, 545-568.		12
79	Bayesian Uncertainty Quantification and Propagation in Nonlinear Structural Dynamics. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 33-41.	0.3	12
80	Stochastic Response Cumulants of MDOF Linear Systems. Journal of Engineering Mechanics - ASCE, 1995, 121, 1181-1192.	1.6	11
81	Response cumulants of nonlinear systems subject to external and multiplicative excitations. Probabilistic Engineering Mechanics, 1999, 14, 149-160.	1.3	9
82	Hierarchical Bayesian uncertainty quantification of Finite Element models using modal statistical information. Mechanical Systems and Signal Processing, 2022, 179, 109296.	4.4	9
83	KINETIC PARAMETER ESTIMATION BY STANDARD OPTIMIZATION METHODS IN CATALYTIC CONVERTER MODELING. Chemical Engineering Communications, 2004, 191, 1473-1501.	1.5	8
84	A unified sampling-based framework for optimal sensor placement considering parameter and prediction inference. Mechanical Systems and Signal Processing, 2021, 161, 107950.	4.4	8
85	Direct derivation of response moment and cumulant equations for non-linear stochastic problems. International Journal of Non-Linear Mechanics, 2000, 35, 817-835.	1.4	7
86	A Bayesian methodology for crack identification in structures using strain measurements. International Journal of Reliability and Safety, 2010, 4, 206.	0.2	7
87	Bayesian optimal experimental design for parameter estimation and response predictions in complex dynamical systems. Procedia Engineering, 2017, 199, 972-977.	1.2	7
88	Computational Framework for Online Estimation of Fatigue Damage using Vibration Measurements from a Limited Number of Sensors. Procedia Engineering, 2017, 199, 1906-1911.	1.2	7
89	Statistics-based Bayesian modeling framework for uncertainty quantification and propagation. Mechanical Systems and Signal Processing, 2022, 174, 109102.	4.4	7
90	<title>Entropy-based optimal sensor location for structural damage detection</title>. , 1998, 3325, 161.		6

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91	Fatigue Reliability of Multidimensional Vibratory Degrading Systems under Random Loading. Journal of Engineering Mechanics - ASCE, 2010, 136, 179-188.	1.6	6
92	Detection of arterial wall abnormalities via Bayesian model selection. Royal Society Open Science, 2019, 6, 182229.	1.1	6
93	Bayesian estimation of tension in bridge hangers using modal frequency measurements. Structural Monitoring and Maintenance, 2016, 3, 349-375.	1.7	6
94	Robust and Reliability-Based Structural Topology Optimization Using a Continuous Adjoint Method. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2016, 2, .	1.1	5
95	Hierarchical Bayesian Uncertainty Quantification for a Model of the Red Blood Cell. Physical Review Applied, 2021, 15, .	1.5	5
96	Seismic and vibration tests for assessing the effectiveness of GFRP for retrofitting masonry structures. Smart Structures and Systems, 2012, 9, 207-230.	1.9	5
97	Hierarchical Bayesian learning framework for multi-level modeling using multi-level data. Mechanical Systems and Signal Processing, 2022, 179, 109179.	4.4	5
98	Structural Dynamics: Recent Advances. Journal of Engineering Mechanics - ASCE, 1993, 119, 1505-1506.	1.6	4
99	Special Issue on Uncertainty Quantification and Propagation in Structural Systems. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2016, 2, .	1.1	4
100	Implications of subsoil-foundation modelling on the dynamic characteristics of a monitored bridge. Structure and Infrastructure Engineering, 2019, 15, 180-192.	2.0	4
101	Adaptive Bayesian Inference Framework for Joint Model and Noise Identification. Journal of Engineering Mechanics - ASCE, 2022, 148, .	1.6	4
102	A Bayesian Expectation-Maximization (BEM) methodology for joint input-state estimation and virtual sensing of structures. Mechanical Systems and Signal Processing, 2022, 169, 108602.	4.4	4
103	Robust optimised design of 3D printed elastic metastructures: A trade-off between complexity and vibration attenuation. Journal of Sound and Vibration, 2022, 529, 116896.	2.1	4
104	Approximate Random Vibration Analysis of Classically Damped MDOF Systems. Journal of Engineering Mechanics - ASCE, 1994, 120, 75-96.	1.6	3
105	A Nonlinear Model Inversion Method for Joint System Parameter, Noise, and Input Identification of Civil Structures. Procedia Engineering, 2017, 199, 924-929.	1.2	3
106	Reliability Analysis of Dynamical Systems. Lecture Notes in Applied and Computational Mechanics, 2019, , 69-111.	2.0	3
107	Bayesian Uncertainty Quantification andÂPropagation (UQ+P): State-of-the-Art Tools for Linear and Nonlinear Structural Dynamics Models. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2016, , 137-170.	0.3	3
108	Information-Driven Modeling of Structures Using a Bayesian Framework. Lecture Notes in Civil Engineering, 2018, , 38-61.	0.3	3

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109	Monitoring gross vehicle weight with a probabilistic and influence line-free bridge weight-in-motion scheme based on a transmissibility-like index. Mechanical Systems and Signal Processing, 2022, 177, 109133.	4.4	3
110	Asymptotic 2p-moment stability of stochastic linear systems. Mechanics Research Communications, 1999, 26, 21-29.	1.0	2
111	Fatigue Monitoring and Remaining Lifetime Prognosis Using Operational Vibration Measurements. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 133-136.	0.3	2
112	Bayesian Finite Element Model Updating. Lecture Notes in Applied and Computational Mechanics, 2019, , 179-227.	2.0	2
113	Fast Computing Techniques for Bayesian Uncertainty Quantification in Structural Dynamics. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 25-31.	0.3	2
114	Vibration-based Damage Localization and Quantification Framework of Large-Scale Truss Structures. Structural Health Monitoring, 2023, 22, 1376-1398.	4.3	2
115	A Bayesian framework for calibration of multiaxial fatigue curves. International Journal of Fatigue, 2022, 163, 107105.	2.8	2
116	Closure to â€œNew Approximations for Reliability Integralsâ€•by David C. Polidori, James L. Beck, and Costas Papadimitriou. Journal of Engineering Mechanics - ASCE, 2001, 127, 207-209.	1.6	1
117	Bayesian Modeling and Updating. , 2004, , .		1
118	Nonlinear Gear Transmission System Numerical Dynamic Analysis and Experimental Validation. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 159-167.	0.3	1
119	Experimental Validation of the Dual Kalman Filter for Online and Real-Time State and Input Estimation. Conference Proceedings of the Society for Experimental Mechanics, 2015, , 1-13.	0.3	1
120	A Bayesian Framework for Optimal Experimental Design in Structural Dynamics. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 263-270.	0.3	1
121	Approximate Bayesian Computation for Granular and Molecular Dynamics Simulations. , 2016, , .		1
122	Optimal Sensor Placement for Response Reconstruction in Structural Dynamics. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 205-210.	0.3	1
123	Hierarchical Bayesian Calibration and Response Prediction of a 10-Story Building Model. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 153-165.	0.3	1
124	Robust Optimal Sensor Placement for Response Reconstruction Using OutputOnly Vibration Measurements. , 2019, , .		1
125	Mean-square stability of linear systems with small bounded stochastic perturbations of their coefficients. Mechanics Research Communications, 1997, 24, 231-236.	1.0	0
126	Optimization Algorithms for System Integration. Advances in Science and Technology, 0, , .	0.2	0

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127	Special issue of the Journal of Structural Safety in honor of Professor James L. Beck. Structural Safety, 2010, 32, 273-274.	2.8	0
128	Optimal Sensor Location for Model Parameter Estimation in CFD. , 2013, , .		0
129	Sensitivity Analysis for Uncertainty Propagation and Robust Design. , 2015, , .		0
130	Parametrization of Reduced-Order Models Based on Global Interface Reduction. Lecture Notes in Applied and Computational Mechanics, 2019, , 49-65.	2.0	0
131	Data-driven prediction and origin identification of epidemics in population networks. Royal Society Open Science, 2021, 8, 200531.	1.1	0
132	A streamline approach to multiaxial fatigue monitoring using virtual sensing. Structural Control and Health Monitoring, 2022, 29, e2863.	1.9	0
133	Pareto Optimal Structural Models and Predictions Consistent With Data and Modal Residuals. , 2007, , .		0