

# Costas Papadimitriou

## List of Publications by Year in descending order

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133  
papers

5,442  
citations

87888

38  
h-index

88630

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.	3.9	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.	8.0	303
3	Entropy-Based Optimal Sensor Location for Structural Model Updating. JVC/Journal of Vibration and Control, 2000, 6, 781-800.	2.6	276
4	Updating robust reliability using structural test data. Probabilistic Engineering Mechanics, 2001, 16, 103-113.	2.7	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.	8.0	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.	2.6	192
7	Hierarchical Bayesian model updating for structural identification. Mechanical Systems and Signal Processing, 2015, 64-65, 360-376.	8.0	182
8	The effect of prediction error correlation on optimal sensor placement in structural dynamics. Mechanical Systems and Signal Processing, 2012, 28, 105-127.	8.0	159
9	Bayesian uncertainty quantification and propagation in molecular dynamics simulations: A high performance computing framework. Journal of Chemical Physics, 2012, 137, 144103.	3.0	154
10	Sequential importance sampling for structural reliability analysis. Structural Safety, 2016, 62, 66-75.	5.3	149
11	Leakage detection in water pipe networks using a Bayesian probabilistic framework. Probabilistic Engineering Mechanics, 2003, 18, 315-327.	2.7	142
12	On prediction error correlation in Bayesian model updating. Journal of Sound and Vibration, 2013, 332, 4136-4152.	3.9	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.	4.0	130
14	Component mode synthesis techniques for finite element model updating. Computers and Structures, 2013, 126, 15-28.	4.4	126
15	A probabilistic approach to structural model updating. Soil Dynamics and Earthquake Engineering, 1998, 17, 495-507.	3.8	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.	2.6	102
17	Pareto optimal sensor locations for structural identification. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 1655-1673.	6.6	90
18	Î4U: A high performance computing framework for Bayesian uncertainty quantification of complex models. Journal of Computational Physics, 2015, 284, 1-21.	3.8	89

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19	X-TMCMC: Adaptive kriging for Bayesian inverse modeling. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 289, 409-428.	6.6	87
20	Bridge health monitoring system based on vibration measurements. <i>Bulletin of Earthquake Engineering</i> , 2009, 7, 469-483.	4.1	80
21	Optimal Sensor Placement Methodology for Identification with Unmeasured Excitation. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2001, 123, 677-686.	1.6	73
22	Structural identification based on optimally weighted modal residuals. <i>Mechanical Systems and Signal Processing</i> , 2007, 21, 4-23.	8.0	71
23	Adaptive Kalman filters for nonlinear finite element model updating. <i>Mechanical Systems and Signal Processing</i> , 2020, 143, 106837.	8.0	68
24	Model-reduction techniques for Bayesian finite element model updating using dynamic response data. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2014, 279, 301-324.	6.6	65
25	Input-state-parameter estimation of structural systems from limited output information. <i>Mechanical Systems and Signal Processing</i> , 2019, 126, 711-746.	8.0	65
26	Bayesian optimal estimation for output-only nonlinear system and damage identification of civil structures. <i>Structural Control and Health Monitoring</i> , 2018, 25, e2128.	4.0	64
27	Structural model updating and prediction variability using Pareto optimal models. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2008, 198, 138-149.	6.6	59
28	Probabilistic hierarchical Bayesian framework for time-domain model updating and robust predictions. <i>Mechanical Systems and Signal Processing</i> , 2019, 123, 648-673.	8.0	55
29	Multi-criteria optimal structural design under uncertainty. <i>Earthquake Engineering and Structural Dynamics</i> , 1999, 28, 741-761.	4.4	53
30	Structural health monitoring and fatigue damage estimation using vibration measurements and finite element model updating. <i>Structural Health Monitoring</i> , 2019, 18, 1189-1206.	7.5	53
31	Optimal sensor placement for multi-setup modal analysis of structures. <i>Journal of Sound and Vibration</i> , 2017, 401, 214-232.	3.9	48
32	The use of updated robust reliability measures in stochastic dynamical systems. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2013, 267, 293-317.	6.6	45
33	Sequential Bayesian estimation of state and input in dynamical systems using output-only measurements. <i>Mechanical Systems and Signal Processing</i> , 2019, 131, 659-688.	8.0	45
34	Accounting for amplitude of excitation in model updating through a hierarchical Bayesian approach: Application to a two-story reinforced concrete building. <i>Mechanical Systems and Signal Processing</i> , 2019, 123, 68-83.	8.0	43
35	Reliability sensitivity analysis of stochastic finite element models. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 296, 327-351.	6.6	41
36	Probabilistic damage identification of a designed 9-story building using modal data in the presence of modeling errors. <i>Engineering Structures</i> , 2017, 131, 542-552.	5.3	41

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37	Multi-objective framework for structural model identification. <i>Earthquake Engineering and Structural Dynamics</i> , 2005, 34, 665-685.	4.4	40
38	Data Driven, Predictive Molecular Dynamics for Nanoscale Flow Simulations under Uncertainty. <i>Journal of Physical Chemistry B</i> , 2013, 117, 14808-14816.	2.6	40
39	Implementation of an adaptive meta-model for Bayesian finite element model updating in time domain. <i>Reliability Engineering and System Safety</i> , 2017, 160, 174-190.	8.9	40
40	Moving resonance in nonlinear response to fully nonstationary stochastic ground motion. <i>Probabilistic Engineering Mechanics</i> , 1993, 8, 157-167.	2.7	39
41	Treatment of Unidentifiability in Structural Model Updating. <i>Advances in Structural Engineering</i> , 2000, 3, 19-39.	2.4	39
42	Bayesian inference for damage identification based on analytical probabilistic model of scattering coefficient estimators and ultrafast wave scattering simulation scheme. <i>Journal of Sound and Vibration</i> , 2020, 468, 115083.	3.9	38
43	Variability of updated finite element models and their predictions consistent with vibration measurements. <i>Structural Control and Health Monitoring</i> , 2012, 19, 630-654.	4.0	36
44	New Approximations for Reliability Integrals. <i>Journal of Engineering Mechanics - ASCE</i> , 1999, 125, 466-475.	2.9	35
45	Approximate analysis of response variability of uncertain linear systems. <i>Probabilistic Engineering Mechanics</i> , 1995, 10, 251-264.	2.7	33
46	Aerodynamic shape optimization for minimum robust drag and lift reliability constraint. <i>Aerospace Science and Technology</i> , 2016, 55, 24-33.	4.8	33
47	Hierarchical Bayesian operational modal analysis: Theory and computations. <i>Mechanical Systems and Signal Processing</i> , 2020, 140, 106663.	8.0	33
48	Optimal experimental design in stochastic structural dynamics. <i>Probabilistic Engineering Mechanics</i> , 2005, 20, 67-78.	2.7	30
49	Model-reduction techniques for reliability-based design problems of complex structural systems. <i>Reliability Engineering and System Safety</i> , 2016, 149, 204-217.	8.9	29
50	Bayesian optimal sensor placement for crack identification in structures using strain measurements. <i>Structural Control and Health Monitoring</i> , 2018, 25, e2137.	4.0	29
51	Structural identification of Egnatia Odos bridges based on ambient and earthquake induced vibrations. <i>Bulletin of Earthquake Engineering</i> , 2009, 7, 485-501.	4.1	26
52	An enhanced substructure coupling technique for dynamic re-analyses: Application to simulation-based problems. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016, 307, 215-234.	6.6	26
53	Data-driven inference of the reproduction number for COVID-19 before and after interventions for 51 European countries. <i>Swiss Medical Weekly</i> , 2020, 150, w20313.	1.6	26
54	Optimal sensor placement for artificial swimmers. <i>Journal of Fluid Mechanics</i> , 2020, 884, .	3.4	25

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55	Data-driven uncertainty quantification and propagation in structural dynamics through a hierarchical Bayesian framework. <i>Probabilistic Engineering Mechanics</i> , 2020, 60, 103047.	2.7	25
56	Bayesian uncertainty quantification and propagation for discrete element simulations of granular materials. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2014, 282, 218-238.	6.6	24
57	A general substructure-based framework for input-state estimation using limited output measurements. <i>Mechanical Systems and Signal Processing</i> , 2021, 150, 107223.	8.0	24
58	Hierarchical Bayesian modeling framework for model updating and robust predictions in structural dynamics using modal features. <i>Mechanical Systems and Signal Processing</i> , 2022, 170, 108784.	8.0	23
59	Bayesian uncertainty quantification of turbulence models based on high-order adjoint. <i>Computers and Fluids</i> , 2015, 120, 82-97.	2.5	22
60	Modeling Error Estimation and Response Prediction of a 10-Story Building Model Through a Hierarchical Bayesian Model Updating Framework. <i>Frontiers in Built Environment</i> , 2019, 5, .	2.3	22
61	Accounting for Modeling Errors and Inherent Structural Variability through a Hierarchical Bayesian Model Updating Approach: An Overview. <i>Sensors</i> , 2020, 20, 3874.	3.8	22
62	Fusing heterogeneous data for the calibration of molecular dynamics force fields using hierarchical Bayesian models. <i>Journal of Chemical Physics</i> , 2016, 145, 244112.	3.0	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. <i>Mechanical Systems and Signal Processing</i> , 2020, 143, 106802.	8.0	21
64	Bayesian Optimal Sensor Placement for Modal Identification of Civil Infrastructures. <i>Journal of Smart Cities</i> , 2017, 2, .	0.5	21
65	Bayesian identification of the tendon fascicle's structural composition using finite element models for helical geometries. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2017, 313, 744-758.	6.6	20
66	Nonlinear model updating through a hierarchical Bayesian modeling framework. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022, 392, 114646.	6.6	20
67	Data driven inference for the repulsive exponent of the Lennard-Jones potential in molecular dynamics simulations. <i>Scientific Reports</i> , 2017, 7, 16576.	3.3	19
68	Bayesian Annealed Sequential Importance Sampling: An Unbiased Version of Transitional Markov Chain Monte Carlo. <i>ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering</i> , 2018, 4, .	1.1	19
69	Bayesian Model-Updating Using Features of Modal Data: Application to the Metsovo Bridge. <i>Journal of Sensor and Actuator Networks</i> , 2020, 9, 27.	3.9	18
70	Optimal Sensor Placement for Reliable Virtual Sensing Using Modal Expansion and Information Theory. <i>Sensors</i> , 2021, 21, 3400.	3.8	18
71	Optimal sensor placement for parameter estimation and virtual sensing of strains on an offshore wind turbine considering sensor installation cost. <i>Mechanical Systems and Signal Processing</i> , 2022, 169, 108787.	8.0	18
72	Stochastic cumulant analysis of MDOF systems with polynomial-type nonlinearities. <i>Probabilistic Engineering Mechanics</i> , 1996, 11, 1-13.	2.7	17

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73	An analytical perspective on Bayesian uncertainty quantification and propagation in mode shape assembly. <i>Mechanical Systems and Signal Processing</i> , 2020, 135, 106376.	8.0	17
74	Optimal Flow Sensing for Schooling Swimmers. <i>Biomimetics</i> , 2020, 5, 10.	3.3	13
75	Optimal allocation of limited test resources for the quantification of COVID-19 infections. <i>Swiss Medical Weekly</i> , 2020, 150, w20445.	1.6	13
76	Approximate analysis of higher cumulants for multi-degree-of-freedom random vibration. <i>Probabilistic Engineering Mechanics</i> , 1994, 9, 71-82.	2.7	12
77	A new stationary PDF approximation for non-linear oscillators. <i>International Journal of Non-Linear Mechanics</i> , 2000, 35, 657-673.	2.6	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. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2013, , 33-41.	0.5	12
80	Stochastic Response Cumulants of MDOF Linear Systems. <i>Journal of Engineering Mechanics - ASCE</i> , 1995, 121, 1181-1192.	2.9	11
81	Response cumulants of nonlinear systems subject to external and multiplicative excitations. <i>Probabilistic Engineering Mechanics</i> , 1999, 14, 149-160.	2.7	9
82	Hierarchical Bayesian uncertainty quantification of Finite Element models using modal statistical information. <i>Mechanical Systems and Signal Processing</i> , 2022, 179, 109296.	8.0	9
83	KINETIC PARAMETER ESTIMATION BY STANDARD OPTIMIZATION METHODS IN CATALYTIC CONVERTER MODELING. <i>Chemical Engineering Communications</i> , 2004, 191, 1473-1501.	2.6	8
84	A unified sampling-based framework for optimal sensor placement considering parameter and prediction inference. <i>Mechanical Systems and Signal Processing</i> , 2021, 161, 107950.	8.0	8
85	Direct derivation of response moment and cumulant equations for non-linear stochastic problems. <i>International Journal of Non-Linear Mechanics</i> , 2000, 35, 817-835.	2.6	7
86	A Bayesian methodology for crack identification in structures using strain measurements. <i>International Journal of Reliability and Safety</i> , 2010, 4, 206.	0.2	7
87	Bayesian optimal experimental design for parameter estimation and response predictions in complex dynamical systems. <i>Procedia Engineering</i> , 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. <i>Procedia Engineering</i> , 2017, 199, 1906-1911.	1.2	7
89	Statistics-based Bayesian modeling framework for uncertainty quantification and propagation. <i>Mechanical Systems and Signal Processing</i> , 2022, 174, 109102.	8.0	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.	2.9	6
92	Detection of arterial wall abnormalities via Bayesian model selection. Royal Society Open Science, 2019, 6, 182229.	2.4	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, .	1.7	5
95	Hierarchical Bayesian Uncertainty Quantification for a Model of the Red Blood Cell. Physical Review Applied, 2021, 15, .	3.8	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.	8.0	5
98	Structural Dynamics: Recent Advances. Journal of Engineering Mechanics - ASCE, 1993, 119, 1505-1506.	2.9	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, .	1.7	4
100	Implications of subsoil-foundation modelling on the dynamic characteristics of a monitored bridge. Structure and Infrastructure Engineering, 2019, 15, 180-192.	3.7	4
101	Adaptive Bayesian Inference Framework for Joint Model and Noise Identification. Journal of Engineering Mechanics - ASCE, 2022, 148, .	2.9	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.	8.0	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.	3.9	4
104	Approximate Random Vibration Analysis of Classically Damped MDOF Systems. Journal of Engineering Mechanics - ASCE, 1994, 120, 75-96.	2.9	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.	2.2	3
107	Bayesian Uncertainty Quantification and Propagation (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.	0.6	3
108	Information-Driven Modeling of Structures Using a Bayesian Framework. Lecture Notes in Civil Engineering, 2018, , 38-61.	0.4	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. <i>Mechanical Systems and Signal Processing</i> , 2022, 177, 109133.	8.0	3
110	Asymptotic 2p-moment stability of stochastic linear systems. <i>Mechanics Research Communications</i> , 1999, 26, 21-29.	1.8	2
111	Fatigue Monitoring and Remaining Lifetime Prognosis Using Operational Vibration Measurements. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2019, , 133-136.	0.5	2
112	Bayesian Finite Element Model Updating. <i>Lecture Notes in Applied and Computational Mechanics</i> , 2019, , 179-227.	2.2	2
113	Fast Computing Techniques for Bayesian Uncertainty Quantification in Structural Dynamics. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2013, , 25-31.	0.5	2
114	Vibration-based Damage Localization and Quantification Framework of Large-Scale Truss Structures. <i>Structural Health Monitoring</i> , 2023, 22, 1376-1398.	7.5	2
115	A Bayesian framework for calibration of multiaxial fatigue curves. <i>International Journal of Fatigue</i> , 2022, 163, 107105.	5.7	2
116	Closure to "New Approximations for Reliability Integrals" by David C. Polidori, James L. Beck, and Costas Papadimitriou. <i>Journal of Engineering Mechanics - ASCE</i> , 2001, 127, 207-209.	2.9	1
117	Bayesian Modeling and Updating. , 2004, , .		1
118	Nonlinear Gear Transmission System Numerical Dynamic Analysis and Experimental Validation. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2014, , 159-167.	0.5	1
119	Experimental Validation of the Dual Kalman Filter for Online and Real-Time State and Input Estimation. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2015, , 1-13.	0.5	1
120	A Bayesian Framework for Optimal Experimental Design in Structural Dynamics. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2016, , 263-270.	0.5	1
121	Approximate Bayesian Computation for Granular and Molecular Dynamics Simulations. , 2016, , .		1
122	Optimal Sensor Placement for Response Reconstruction in Structural Dynamics. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2020, , 205-210.	0.5	1
123	Hierarchical Bayesian Calibration and Response Prediction of a 10-Story Building Model. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2019, , 153-165.	0.5	1
124	Robust Optimal Sensor Placement for Response Reconstruction Using Output-Only Vibration Measurements. , 2019, , .		1
125	Mean-square stability of linear systems with small bounded stochastic perturbations of their coefficients. <i>Mechanics Research Communications</i> , 1997, 24, 231-236.	1.8	0
126	Optimization Algorithms for System Integration. <i>Advances in Science and Technology</i> , 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.	5.3	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.	2.2	0
131	Data-driven prediction and origin identification of epidemics in population networks. Royal Society Open Science, 2021, 8, 200531.	2.4	0
132	A streamline approach to multiaxial fatigue monitoring using virtual sensing. Structural Control and Health Monitoring, 2022, 29, e2863.	4.0	0
133	Pareto Optimal Structural Models and Predictions Consistent With Data and Modal Residuals. , 2007, , .		0