

# Rodrigo Astroza

## List of Publications by Year in descending order

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65  
papers

1,264  
citations

430874

18  
h-index

377865

34  
g-index

69  
all docs

69  
docs citations

69  
times ranked

736  
citing authors

#	ARTICLE	IF	CITATIONS
1	Extended Kalman filter for material parameter estimation in nonlinear structural finite element models using direct differentiation method. <i>Earthquake Engineering and Structural Dynamics</i> , 2015, 44, 1495-1522.	4.4	94
2	Nonlinear finite element model updating for damage identification of civil structures using batch Bayesian estimation. <i>Mechanical Systems and Signal Processing</i> , 2017, 84, 194-222.	8.0	90
3	Material Parameter Identification in Distributed Plasticity FE Models of Frame-Type Structures Using Nonlinear Stochastic Filtering. <i>Journal of Engineering Mechanics - ASCE</i> , 2015, 141, .	2.9	86
4	Bayesian nonlinear structural FE model and seismic input identification for damage assessment of civil structures. <i>Mechanical Systems and Signal Processing</i> , 2017, 93, 661-687.	8.0	74
5	Full-Scale Structural and Nonstructural Building System Performance during Earthquakes: Part I "Specimen Description, Test Protocol, and Structural Response. <i>Earthquake Spectra</i> , 2016, 32, 737-770.	3.1	72
6	A dual adaptive filtering approach for nonlinear finite element model updating accounting for modeling uncertainty. <i>Mechanical Systems and Signal Processing</i> , 2019, 115, 782-800.	8.0	68
7	Adaptive Kalman filters for nonlinear finite element model updating. <i>Mechanical Systems and Signal Processing</i> , 2020, 143, 106837.	8.0	68
8	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
9	Full-Scale Structural and Nonstructural Building System Performance during Earthquakes: Part II "NCS Damage States. <i>Earthquake Spectra</i> , 2016, 32, 771-794.	3.1	51
10	Performance comparison of Kalman-based filters for nonlinear structural finite element model updating. <i>Journal of Sound and Vibration</i> , 2019, 438, 520-542.	3.9	44
11	Effects of model uncertainty in nonlinear structural finite element model updating by numerical simulation of building structures. <i>Structural Control and Health Monitoring</i> , 2019, 26, e2297.	4.0	43
12	Finite element model updating using simulated annealing hybridized with unscented Kalman filter. <i>Computers and Structures</i> , 2016, 177, 176-191.	4.4	40
13	System identification of a full-scale five-story reinforced concrete building tested on the NEES@UCSD shake table. <i>Structural Control and Health Monitoring</i> , 2016, 23, 535-559.	4.0	36
14	Auto-regressive model based input and parameter estimation for nonlinear finite element models. <i>Mechanical Systems and Signal Processing</i> , 2020, 143, 106779.	8.0	28
15	Influence of the construction process and nonstructural components on the modal properties of a five-story building. <i>Earthquake Engineering and Structural Dynamics</i> , 2016, 45, 1063-1084.	4.4	25
16	Bayesian updating and identifiability assessment of nonlinear finite element models. <i>Mechanical Systems and Signal Processing</i> , 2022, 167, 108517.	8.0	23
17	Nonlinear FE model updating and reconstruction of the response of an instrumented seismic isolated bridge to the 2010 Maule Chile earthquake. <i>Earthquake Engineering and Structural Dynamics</i> , 2017, 46, 2699-2716.	4.4	19
18	A Bayesian approach for fatigue damage diagnosis and prognosis of wind turbine blades. <i>Mechanical Systems and Signal Processing</i> , 2022, 174, 109067.	8.0	18

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19	Site response analysis using one-dimensional equivalent-linear method and Bayesian filtering. Computers and Geotechnics, 2017, 89, 43-54.	4.7	17
20	Information-Theoretic Approach for Identifiability Assessment of Nonlinear Structural Finite-Element Models. Journal of Engineering Mechanics - ASCE, 2019, 145, 04019039.	2.9	17
21	Experimental Evaluation of the Seismic Response of a Rooftop-Mounted Cooling Tower. Earthquake Spectra, 2015, 31, 1567-1589.	3.1	15
22	Bayesian updating of complex nonlinear FE models with high-dimensional parameter space using heterogeneous measurements and a batch-recursive approach. Engineering Structures, 2019, 201, 109724.	5.3	15
23	Time-Variant Modal Parameters and Response Behavior of a Base-Isolated Building Tested on a Shake Table. Earthquake Spectra, 2018, 34, 121-143.	3.1	14
24	Real-time thermal dynamic analysis of a house using RC models and joint state-parameter estimation. Building and Environment, 2021, 188, 107184.	6.9	14
25	Predominant period and equivalent viscous damping ratio identification for a full-scale building shake table test. Earthquake Engineering and Structural Dynamics, 2017, 46, 2459-2477.	4.4	13
26	Shake table testing of an elevator system in a full-scale five-story building. Earthquake Engineering and Structural Dynamics, 2017, 46, 391-407.	4.4	13
27	Bayesian parameter and joint probability distribution estimation for a hysteretic constitutive model of reinforcing steel. Structural Safety, 2021, 90, 102062.	5.3	13
28	Seismic response analysis and modal identification of a full-scale five-story base-isolated building tested on the NEES@UCSD shake table. Engineering Structures, 2021, 238, 112087.	5.3	11
29	Dynamic characteristics and seismic behavior of prefabricated steel stairs in a full-scale five-story building shake table test program. Earthquake Engineering and Structural Dynamics, 2015, 44, 2507-2527.	4.4	10
30	Seismic fragility assessment of Chilean skewed highway bridges. Engineering Structures, 2021, 249, 113300.	5.3	9
31	Bayesian Methods for Nonlinear System Identification of Civil Structures. MATEC Web of Conferences, 2015, 24, 03002.	0.2	8
32	Parameter estimation of resistor-capacitor models for building thermal dynamics using the unscented Kalman filter. Journal of Building Engineering, 2021, 34, 101639.	3.4	8
33	Shake Table Testing of a Full-Scale Five-Story Building: System Identification of the Five-Story Test Structure. , 2013, , .		7
34	Pretest Nonlinear Finite-Element Modeling and Response Simulation of a Full-Scale 5-Story Reinforced Concrete Building Tested on the NEES-UCSD Shake Table. Journal of Structural Engineering, 2018, 144, .	3.4	7
35	Uncertainty quantification and propagation in the modeling of liquefiable sands. Soil Dynamics and Earthquake Engineering, 2019, 123, 217-229.	3.8	6
36	Shake Table Testing of a Full-Scale Five-Story Building: Pre-test Simulation of the Test Building and Development of an NCS Design Criteria. , 2013, , .		5

#	ARTICLE	IF	CITATIONS
37	Biopolymer-Waste Fiber Reinforcement for Earthen Materials: Capillary, Mechanical, Impact, and Abrasion Performance. <i>Polymers</i> , 2020, 12, 1819.	4.5	5
38	Bayesian Nonlinear Finite Element Model Updating of a Full-Scale Bridge-Column Using Sequential Monte Carlo. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2020, , 389-397.	0.5	5
39	Statistical analysis of the modal properties of a seismically-damaged five-story RC building identified using ambient vibration data. <i>Journal of Building Engineering</i> , 2022, 52, 104411.	3.4	5
40	Shear bond behaviour of elemental composite beams with different configurations. <i>Engineering Structures</i> , 2019, 201, 109742.	5.3	4
41	Bayesian inference for calibration and validation of uniaxial reinforcing steel models. <i>Engineering Structures</i> , 2021, 243, 112386.	5.3	4
42	Time variant system identification of superstructures of base-isolated buildings. <i>Engineering Structures</i> , 2021, 246, 112697.	5.3	4
43	Evolution of Dynamic Properties of a 5-Story RC Building During Construction. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2013, , 163-173.	0.5	4
44	Nonlinear FE model updating of seismic isolated bridge instrumented during the 2010 Mw 8.8 Maule-Chile Earthquake. <i>Procedia Engineering</i> , 2017, 199, 3003-3008.	1.2	3
45	A Nonlinear Model Inversion Method for Joint System Parameter, Noise, and Input Identification of Civil Structures. <i>Procedia Engineering</i> , 2017, 199, 924-929.	1.2	3
46	Non-unique Estimates in Material Parameter Identification of Nonlinear FE Models Governed by Multiaxial Material Models Using Unscented Kalman Filtering. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2020, , 257-265.	0.5	3
47	Batch and Recursive Bayesian Estimation Methods for Nonlinear Structural System Identification. <i>Springer Series in Reliability Engineering</i> , 2017, , 341-364.	0.5	3
48	Soil-basement interaction effects on the seismic response of tall buildings with basement levels. <i>Engineering Structures</i> , 2022, 263, 114406.	5.3	3
49	Adobe mixtures reinforced with fibrillated polypropylene fibers: Physical/mechanical/fracture/durability performance and its limits due to fiber clustering. <i>Construction and Building Materials</i> , 2022, 343, 128102.	7.2	3
50	Modeling the Loss of Vibration Energy in Buildings to Elastic-waves Using High-fidelity FE Modeling and Absorbent Exterior Boundaries. <i>Journal of Earthquake Engineering</i> , 2022, 26, 6567-6584.	2.5	2
51	Nonlinear Structural Finite Element Model Updating Using Batch Bayesian Estimation. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2015, , 35-43.	0.5	2
52	Statistical analysis of the identified modal properties of a 5-story RC seismically damaged building specimen. , 2014, , 4593-4600.		2
53	Test Data-Informed Nonlinear Finite Element Model Updating and Damage Inference of a Shake-table Tested Bridge Column considering Bond-slip under Multiple Earthquakes. <i>Journal of Earthquake Engineering</i> , 2023, 27, 1875-1899.	2.5	2
54	Output-only identification of civil structures using nonlinear finite element model updating. , 2015, , .		1

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55	Nonlinear Structural Finite Element Model Updating Using Stochastic Filtering. Conference Proceedings of the Society for Experimental Mechanics, 2015, , 67-74.	0.5	1
56	Pre-Test Nonlinear FE Modeling and Simulation of a Full-Scale Five-Story Reinforced Concrete Building. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 503-511.	0.5	1
57	System Identification of a Five-Story Building Using Seismic Strong-Motion Data. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 181-189.	0.5	1
58	Wave Dynamic Analysis of the Seismic Response of a Reinforced Concrete Building. AIP Conference Proceedings, 2008, , .	0.4	0
59	Stochastic filtering for damage identification through nonlinear structural finite element model updating. Proceedings of SPIE, 2015, , .	0.8	0
60	Nonlinear structural finite element model updating and uncertainty quantification. Proceedings of SPIE, 2015, , .	0.8	0
61	Calibration of a Large Nonlinear Finite Element Model of a Highway Bridge with Many Uncertain Parameters. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 177-187.	0.5	0
62	Finite Element Model Updating Accounting for Modeling Uncertainty. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 211-221.	0.5	0
63	Nonlinear Model Updating Using Recursive and Batch Bayesian Methods. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 279-286.	0.5	0
64	Output-Only Nonlinear Finite Element Model Updating Using Autoregressive Process. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 83-86.	0.5	0
65	Probabilistic characterization of a high-cycle accumulation model for sands. Computers and Geotechnics, 2022, 147, 104798.	4.7	0