

Alireza Doostan

List of Publications by Year in descending order

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58
papers

2,485
citations

218677

26
h-index

197818

49
g-index

60
all docs

60
docs citations

60
times ranked

1402
citing authors

#	ARTICLE	IF	CITATIONS
1	A non-adapted sparse approximation of PDEs with stochastic inputs. Journal of Computational Physics, 2011, 230, 3015-3034.	3.8	356
2	Compressive sampling of polynomial chaos expansions: Convergence analysis and sampling strategies. Journal of Computational Physics, 2015, 280, 363-386.	3.8	170
3	On the construction and analysis of stochastic models: Characterization and propagation of the errors associated with limited data. Journal of Computational Physics, 2006, 217, 63-81.	3.8	163
4	Stochastic model reduction for chaos representations. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 3951-3966.	6.6	158
5	A weighted ℓ_1 -minimization approach for sparse polynomial chaos expansions. Journal of Computational Physics, 2014, 267, 92-111.	3.8	142
6	Nonlinear Propagation of Orbit Uncertainty Using Non-Intrusive Polynomial Chaos. Journal of Guidance, Control, and Dynamics, 2013, 36, 430-444.	2.8	113
7	A least-squares approximation of partial differential equations with high-dimensional random inputs. Journal of Computational Physics, 2009, 228, 4332-4345.	3.8	107
8	Least squares polynomial chaos expansion: A review of sampling strategies. Computer Methods in Applied Mechanics and Engineering, 2018, 332, 382-407.	6.6	99
9	Coherence motivated sampling and convergence analysis of least squares polynomial Chaos regression. Computer Methods in Applied Mechanics and Engineering, 2015, 290, 73-97.	6.6	92
10	A simple and efficient preconditioning scheme for heaviside enriched XFEM. Computational Mechanics, 2014, 54, 1357-1374.	4.0	74
11	Sparse polynomial chaos expansions via compressed sensing and D-optimal design. Computer Methods in Applied Mechanics and Engineering, 2018, 336, 640-666.	6.6	71
12	Non-intrusive low-rank separated approximation of high-dimensional stochastic models. Computer Methods in Applied Mechanics and Engineering, 2013, 263, 42-55.	6.6	70
13	A probabilistic construction of model validation. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2585-2595.	6.6	62
14	On polynomial chaos expansion via gradient-enhanced ℓ_1 -minimization. Journal of Computational Physics, 2016, 310, 440-458.	3.8	60
15	Satellite collision probability estimation using polynomial chaos expansions. Advances in Space Research, 2013, 52, 1860-1875.	2.6	56
16	Stochastic identification of composite material properties from limited experimental databases, Part II: Uncertainty modelling. Mechanical Systems and Signal Processing, 2012, 27, 484-498.	8.0	42
17	Contributions of Microtubule Dynamic Instability and Rotational Diffusion to Kinetochore Capture. Biophysical Journal, 2017, 112, 552-563.	0.5	42
18	Efficient solution of stochastic systems: Application to the embankment dam problem. Structural Safety, 2007, 29, 238-251.	5.3	41

#	ARTICLE	IF	CITATIONS
19	Sparse identification of nonlinear dynamical systems via reweighted least squares. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021, 376, 113620.	6.6	38
20	On uncertainty quantification of lithium-ion batteries: Application to an LiC ₆ /LiCoO ₂ cell. <i>Journal of Power Sources</i> , 2015, 300, 507-524.	7.8	37
21	Postmaneuver Collision Probability Estimation Using Sparse Polynomial Chaos Expansions. <i>Journal of Guidance, Control, and Dynamics</i> , 2015, 38, 1425-1437.	2.8	37
22	Practical error bounds for a non-intrusive bi-fidelity approach to parametric/stochastic model reduction. <i>Journal of Computational Physics</i> , 2018, 368, 315-332.	3.8	34
23	A low-rank control variate for multilevel Monte Carlo simulation of high-dimensional uncertain systems. <i>Journal of Computational Physics</i> , 2017, 341, 121-139.	3.8	33
24	Determination of the polymer-solvent interaction parameter for PEG hydrogels in water: Application of a self learning algorithm. <i>Polymer</i> , 2015, 66, 135-147.	3.8	30
25	Partitioned treatment of uncertainty in coupled domain problems: A separated representation approach. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2014, 274, 103-124.	6.6	28
26	Time-dependent global sensitivity analysis with active subspaces for a lithium ion battery model. <i>Statistical Analysis and Data Mining</i> , 2017, 10, 243-262.	2.8	28
27	Basis adaptive sample efficient polynomial chaos (BASE-PC). <i>Journal of Computational Physics</i> , 2018, 371, 20-49.	3.8	27
28	Randomized Alternating Least Squares for Canonical Tensor Decompositions: Application to A PDE With Random Data. <i>SIAM Journal of Scientific Computing</i> , 2016, 38, A2634-A2664.	2.8	26
29	Topology optimization under uncertainty using a stochastic gradient-based approach. <i>Structural and Multidisciplinary Optimization</i> , 2020, 62, 2255-2278.	3.5	26
30	Extended stochastic FEM for diffusion problems with uncertain material interfaces. <i>Computational Mechanics</i> , 2013, 51, 1031-1049.	4.0	22
31	A hybrid collocation/Galerkin scheme for convective heat transfer problems with stochastic boundary conditions. <i>International Journal for Numerical Methods in Engineering</i> , 2009, 80, 868-880.	2.8	19
32	SPARSE MULTIREOLUTION REGRESSION FOR UNCERTAINTY PROPAGATION. , 2014, 4, 303-331.		17
33	Heaviside enriched extended stochastic FEM for problems with uncertain material interfaces. <i>Computational Mechanics</i> , 2015, 56, 753-767.	4.0	17
34	Bi-fidelity stochastic gradient descent for structural optimization under uncertainty. <i>Computational Mechanics</i> , 2020, 66, 745-771.	4.0	17
35	Bi-fidelity approximation for uncertainty quantification and sensitivity analysis of irradiated particle-laden turbulence. <i>Journal of Computational Physics</i> , 2020, 402, 108996.	3.8	15
36	A Bi-Fidelity Approach for Uncertainty Quantification of Heat Transfer in a Rectangular Ribbed Channel. , 2016, , .		9

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37	Pass-efficient methods for compression of high-dimensional turbulent flow data. Journal of Computational Physics, 2020, 423, 109704.	3.8	9
38	On stability and monotonicity requirements of finite difference approximations of stochastic conservation laws with random viscosity. Computer Methods in Applied Mechanics and Engineering, 2013, 258, 134-151.	6.6	8
39	Smoothed aggregation algebraic multigrid for stochastic PDE problems with layered materials. Numerical Linear Algebra With Applications, 2014, 21, 239-255.	1.6	8
40	Reduced cost mission design using surrogate models. Advances in Space Research, 2016, 57, 588-603.	2.6	7
41	A stochastic subspace approach to gradient-free optimization in high dimensions. Computational Optimization and Applications, 2021, 79, 339-368.	1.6	7
42	Compressive Sampling Methods for Sparse Polynomial Chaos Expansions. , 2015, , 1-29.		6
43	Reduced-Basis Multifidelity Approach for Efficient Parametric Study of NACA Airfoils. AIAA Journal, 2019, 57, 1481-1491.	2.6	6
44	Finite-Dimensional Density Representation for Aerocapture Uncertainty Quantification. , 2021, , .		6
45	Neural network training using ℓ_1 -regularization and bi-fidelity data. Journal of Computational Physics, 2022, 458, 111010.	3.8	6
46	Orbit uncertainty propagation and sensitivity analysis with separated representations. Celestial Mechanics and Dynamical Astronomy, 2017, 129, 105-136.	1.4	5
47	Level set methods for stochastic discontinuity detection in nonlinear problems. Journal of Computational Physics, 2019, 392, 511-531.	3.8	5
48	Multi-Element Trajectory Models for Satellite Tour Missions. , 2016, , .		4
49	Compressive Sampling Methods for Sparse Polynomial Chaos Expansions. , 2017, , 827-855.		4
50	Optimization via separated representations and the canonical tensor decomposition. Journal of Computational Physics, 2017, 348, 220-230.	3.8	4
51	Reliability-based topology optimization using stochastic gradients. Structural and Multidisciplinary Optimization, 2021, 64, 3089-3108.	3.5	4
52	Task-parallel in situ temporal compression of large-scale computational fluid dynamics data. International Journal of High Performance Computing Applications, 2022, 36, 388-418.	3.7	4
53	Rapid aerodynamic shape optimization under uncertainty using a stochastic gradient approach. Structural and Multidisciplinary Optimization, 2022, 65, .	3.5	4
54	An Evaluation of Multi-Fidelity Modeling Efficiency on a Parametric Study of NACA Airfoils. , 2017, , .		2

#	ARTICLE	IF	CITATIONS
55	Bi-fidelity reduced polynomial chaos expansion for uncertainty quantification. Computational Mechanics, 2022, 69, 405-424.	4.0	2
56	Acceleration of uncertainty propagation through Lagrange multipliers in partitioned stochastic method. Computer Methods in Applied Mechanics and Engineering, 2020, 362, 112837.	6.6	2
57	Prediction of Ultrasonic Guided Wave Propagation in Fluid-Structure and Their Interface under Uncertainty Using Machine Learning. Journal of Engineering Mechanics - ASCE, 2022, 148, .	2.9	2
58	Stochastic Gradient Optimization of Transonic Airfoils. , 2021, , .		0