Dongbin Xiu

List of Publications by Year
in descending order

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64	9,282	136740	133063
papers	citations	32 h-index	59 g-index

66	66	66	4213
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	The Wiener--Askey Polynomial Chaos for Stochastic Differential Equations. SIAM Journal of Scientific Computing, 2002, 24, 619-644.	1.3	3,612
2	High-Order Collocation Methods for Differential Equations with Random Inputs. SIAM Journal of Scientific Computing, 2005, 27, 1118-1139.	1.3	1,204
3	Modeling uncertainty in flow simulations via generalized polynomial chaos. Journal of Computational Physics, 2003, 187, 137-167.	1.9	1,192
4	Modeling uncertainty in steady state diffusion problems via generalized polynomial chaos. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 4927-4948.	3.4	455
5	Stochastic Modeling of Flow-Structure Interactions Using Generalized Polynomial Chaos. Journal of Fluids Engineering, Transactions of the ASME, 2002, 124, 51-59.	0.8	228
6	A new stochastic approach to transient heat conduction modeling with uncertainty. International Journal of Heat and Mass Transfer, 2003, 46, 4681-4693.	2.5	191
7	A Stochastic Collocation Approach to Bayesian Inference in Inverse Problems. Communications in Computational Physics, 2009, 6, 826-847.	0.7	189
8	Data driven governing equations approximation using deep neural networks. Journal of Computational Physics, 2019, 395, 620-635.	1.9	160
9	Numerical Methods for Differential Equations in Random Domains. SIAM Journal of Scientific Computing, 2006, 28, 1167-1185.	1.3	120
10	Evaluation of failure probability via surrogate models. Journal of Computational Physics, 2010, 229, 8966-8980.	1.9	112
11	A generalized polynomial chaos based ensemble Kalman filter with high accuracy. Journal of Computational Physics, 2009, 228, 5454-5469.	1.9	110
12	Equation-free/Galerkin-free POD-assisted computation of incompressible flows. Journal of Computational Physics, 2005, 207, 568-587.	1.9	93
13	A Stochastic Collocation Algorithm with Multifidelity Models. SIAM Journal of Scientific Computing, 2014, 36, A495-A521.	1.3	93
14	Data-driven deep learning of partial differential equations in modal space. Journal of Computational Physics, 2020, 408, 109307.	1.9	84
15	An efficient surrogate-based method for computing rare failure probability. Journal of Computational Physics, 2011, 230, 8683-8697.	1.9	81
16	Numerical approach for quantification of epistemic uncertainty. Journal of Computational Physics, 2010, 229, 4648-4663.	1.9	77
17	Stochastic analysis of transport in tubes with rough walls. Journal of Computational Physics, 2006, 217, 248-259.	1.9	75
18	Stochastic Collocation for Optimal Control Problems with Stochastic PDE Constraints. SIAM Journal on Control and Optimization, 2012, 50, 2659-2682.	1.1	73

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19	Parametric uncertainty analysis of pulse wave propagation in a model of a human arterial network. Journal of Computational Physics, 2007, 226, 1385-1407.	1.9	72
20	Efficient stochastic Galerkin methods for random diffusion equations. Journal of Computational Physics, 2009, 228, 266-281.	1.9	64
21	Stochastic Collocation Methods on Unstructured Grids in High Dimensions via Interpolation. SIAM Journal of Scientific Computing, 2012, 34, A1729-A1752.	1.3	56
22	Computational Aspects of Stochastic Collocation with Multifidelity Models. SIAM-ASA Journal on Uncertainty Quantification, 2014, 2, 444-463.	1.1	56
23	Supersensitivity due to uncertain boundary conditions. International Journal for Numerical Methods in Engineering, 2004, 61, 2114-2138.	1.5	52
24	Asymptotic-preserving methods for hyperbolic and transport equations with random inputs and diffusive scalings. Journal of Computational Physics, 2015, 289, 35-52.	1.9	47
25	Characterization of discontinuities in high-dimensional stochastic problems on adaptive sparse grids. Journal of Computational Physics, 2011, 230, 3977-3997.	1.9	46
26	Variance-Based Global Sensitivity Analysis via Sparse-Grid Interpolation and Cubature. Communications in Computational Physics, 2011, 9, 542-567.	0.7	45
27	Numerical aspects for approximating governing equations using data. Journal of Computational Physics, 2019, 384, 200-221.	1.9	45
28	Minimal multi-element stochastic collocation for uncertainty quantification of discontinuous functions. Journal of Computational Physics, 2013, 242, 790-808.	1.9	40
29	Nonadaptive Quasi-Optimal Points Selection for Least Squares Linear Regression. SIAM Journal of Scientific Computing, 2016, 38, A385-A411.	1.3	39
30	Stochastic Solutions for the Two-Dimensional Advection-Diffusion Equation. SIAM Journal of Scientific Computing, 2004, 26, 578-590.	1.3	35
31	Discontinuity detection in multivariate space for stochastic simulations. Journal of Computational Physics, 2009, 228, 2676-2689.	1.9	33
32	Local Polynomial Chaos Expansion for Linear Differential Equations with High Dimensional Random Inputs. SIAM Journal of Scientific Computing, 2015, 37, A79-A102.	1.3	33
33	Sparse Approximation using ell_1-ell_2 Minimization and Its Application to Stochastic Collocation. SIAM Journal of Scientific Computing, 2017, 39, A229-A254.	1.3	33
34	On numerical properties of the ensemble Kalman filter for data assimilation. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 3574-3583.	3.4	31
35	Data-Driven Learning of Nonautonomous Systems. SIAM Journal of Scientific Computing, 2021, 43, A1607-A1624.	1.3	27
36	Multi-fidelity stochastic collocation method for computation of statistical moments. Journal of Computational Physics, 2017, 341, 386-396.	1.9	26

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37	A Two-Scale Nonperturbative Approach to Uncertainty Analysis of Diffusion in Random Composites. Multiscale Modeling and Simulation, 2004, 2, 662-674.	0.6	24
38	Parameter uncertainty quantification using surrogate models applied to a spatial model of yeast mating polarization. PLoS Computational Biology, 2018, 14, e1006181.	1.5	24
39	An Equation-Free, Multiscale Approach to Uncertainty Quantification. Computing in Science and Engineering, 2005, 7, 16-23.	1.2	23
40	A flexible numerical approach for quantification of epistemic uncertainty. Journal of Computational Physics, 2013, 240, 211-224.	1.9	23
41	Weighted discrete least-squares polynomial approximation using randomized quadratures. Journal of Computational Physics, 2015, 298, 787-800.	1.9	23
42	Deep neural network modeling of unknown partial differential equations in nodal space. Journal of Computational Physics, 2022, 449, 110782.	1.9	23
43	On generalized residual network for deep learning of unknown dynamical systems. Journal of Computational Physics, 2021, 438, 110362.	1.9	22
44	A stochastic Galerkin method for first-order quasilinear hyperbolic systems with uncertainty. Journal of Computational Physics, 2017, 345, 224-244.	1.9	21
45	Generalised Polynomial Chaos for a Class of Linear Conservation Laws. Journal of Scientific Computing, 2012, 51, 293-312.	1.1	19
46	Structure-Preserving Method for Reconstructing Unknown Hamiltonian Systems From Trajectory Data. SIAM Journal of Scientific Computing, 2020, 42, A3704-A3729.	1.3	17
47	Computation of Failure Probability Subject to Epistemic Uncertainty. SIAM Journal of Scientific Computing, 2012, 34, A2946-A2964.	1.3	14
48	A Semi-Lagrangian Method for Turbulence Simulations Using Mixed Spectral Discretizations. Journal of Scientific Computing, 2002, 17, 585-597.	1.1	13
49	Stochastic Markovian modeling of electrophysiology of ion channels: Reconstruction of standard deviations in macroscopic currents. Journal of Theoretical Biology, 2007, 245, 627-637.	0.8	11
50	Fast numerical methods for robust optimal design. Engineering Optimization, 2008, 40, 489-504.	1.5	9
51	Surrogate Based Method for Evaluation of Failure Probability under Multiple Constraints. SIAM Journal of Scientific Computing, 2014, 36, A828-A845.	1.3	9
52	Uncertainty quantification of discontinuous outputs via a non-intrusive bifidelity strategy. Journal of Computational Physics, 2019, 398, 108885.	1.9	9
53	Uncertainty quantification models for microâ€scale squeezeâ€film damping. International Journal for Numerical Methods in Engineering, 2010, 84, 1257-1272.	1.5	8
54	Uncertainty quantification on the macroscopic properties of heterogeneous porous media. Physical Review E, 2018, 98, .	0.8	7

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55	Stochastic Collocation Methods: A Survey. , 2017, , 699-716.		6
56	Equation-Free, Multiscale Computation for Unsteady Random Diffusion. Multiscale Modeling and Simulation, 2005, 4, 915-935.	0.6	5
57	Distributional Sensitivity for Uncertainty Quantification. Communications in Computational Physics, 2011, 10, 140-160.	0.7	4
58	Stochastic Collocation Methods: A Survey. , 2015, , 1-18.		4
59	Deep Learning of Biological Models from Data: Applications to ODE Models. Bulletin of Mathematical Biology, 2021, 83, 19.	0.9	4
60	A Multi-Fidelity Collocation Method for Time-Dependent Parameterized Problems. , 2017, , .		2
61	Methods to Recover Unknown Processes in Partial Differential Equations Using Data. Journal of Scientific Computing, 2020, 85, 1.	1.1	1
62	Sequential Approximation of Functions in Sobolev Spaces Using Random Samples. Communications on Applied Mathematics and Computation, 2019, 1, 449-466.	0.7	0
63	A Non-intrusive Correction Algorithm for Classification Problems with Corrupted Data. Communications on Applied Mathematics and Computation, 2021, 3, 337-356.	0.7	0
64	Construction of discontinuity detectors using convolutional neural networks. Journal of Scientific Computing, 2022, 91, 1.	1.1	0