

# Michael D Shields

## List of Publications by Year in descending order

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57  
papers

1,451  
citations

393982

19  
h-index

344852

36  
g-index

58  
all docs

58  
docs citations

58  
times ranked

995  
citing authors

#	ARTICLE	IF	CITATIONS
1	Direct Simulation Methods for a Class of Normal and Lognormal Random Fields with Applications in Modeling Material Properties. Journal of Engineering Mechanics - ASCE, 2022, 148, .	1.6	2
2	MANIFOLD LEARNING-BASED POLYNOMIAL CHAOS EXPANSIONS FOR HIGH-DIMENSIONAL SURROGATE MODELS. , 2022, 12, 39-64.		17
3	Grassmannian Diffusion Maps--Based Dimension Reduction and Classification for High-Dimensional Data. SIAM Journal of Scientific Computing, 2022, 44, B250-B274.	1.3	7
4	Accelerated statistical failure analysis of multifidelity TRISO fuel models. Journal of Nuclear Materials, 2022, 563, 153604.	1.3	8
5	Simulation of non-stationary and non-Gaussian random processes by 3rd-order Spectral Representation Method: Theory and POD implementation. Mechanical Systems and Signal Processing, 2022, 178, 109150.	4.4	8
6	A survey of unsupervised learning methods for high-dimensional uncertainty quantification in black-box-type problems. Journal of Computational Physics, 2022, 464, 111313.	1.9	12
7	Imprecise subset simulation. Probabilistic Engineering Mechanics, 2022, 69, 103293.	1.3	4
8	Data-driven uncertainty quantification in computational human head models. Computer Methods in Applied Mechanics and Engineering, 2022, 398, 115108.	3.4	5
9	Reliability estimation of an advanced nuclear fuel using coupled active learning, multifidelity modeling, and subset simulation. Reliability Engineering and System Safety, 2022, 226, 108693.	5.1	13
10	Probabilistic modeling and prediction of out-of-plane unidirectional composite lamina properties. Mechanics of Advanced Materials and Structures, 2021, 28, 2310-2326.	1.5	6
11	Imprecise global sensitivity analysis using bayesian multimodel inference and importance sampling. Mechanical Systems and Signal Processing, 2021, 148, 107162.	4.4	12
12	Subset simulation for problems with strongly non-Gaussian, highly anisotropic, and degenerate distributions. Computers and Structures, 2021, 245, 106431.	2.4	14
13	3rd-order Spectral Representation Method: Simulation of multi-dimensional random fields and ergodic multi-variate random processes with fast Fourier transform implementation. Probabilistic Engineering Mechanics, 2021, 64, 103128.	1.3	4
14	Manifold learning for coarse-graining atomistic simulations: Application to amorphous solids. Acta Materialia, 2021, 215, 117008.	3.8	9
15	Probabilistic Modeling of Discrete Structural Response with Application to Composite Plate Penetration Models. Journal of Engineering Mechanics - ASCE, 2021, 147, .	1.6	10
16	Variance-based adaptive sequential sampling for Polynomial Chaos Expansion. Computer Methods in Applied Mechanics and Engineering, 2021, 386, 114105.	3.4	22
17	UQpy: A general purpose Python package and development environment for uncertainty quantification. Journal of Computational Science, 2020, 47, 101204.	1.5	38
18	On the quantification and efficient propagation of imprecise probabilities with copula dependence. International Journal of Approximate Reasoning, 2020, 122, 24-46.	1.9	12

#	ARTICLE	IF	CITATIONS
19	Efficient global sensitivity analysis of structural vibration for a nuclear reactor system subject to nonstationary loading. Nuclear Engineering and Design, 2020, 361, 110544.	0.8	8
20	On the usefulness of gradient information in surrogate modeling: Application to uncertainty propagation in composite material models. Probabilistic Engineering Mechanics, 2020, 60, 103024.	1.3	14
21	Simulation of wind velocity time histories on long span structures modeled as non-Gaussian stochastic waves. Probabilistic Engineering Mechanics, 2020, 59, 103016.	1.3	11
22	Variability in the thermo-mechanical behavior of structural aluminum. Thin-Walled Structures, 2019, 144, 106122.	2.7	9
23	Stress-strain data for aluminum 6061-T651 from 9 lots at 6 temperatures under uniaxial and plane strain tension. Data in Brief, 2019, 25, 104085.	0.5	12
24	Reliability Analysis Using Adaptive Kriging Surrogates with Multimodel Inference. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2019, 5, 04019004.	1.1	23
25	On the high-temperature crushing of metal foams. International Journal of Solids and Structures, 2019, 174-175, 18-27.	1.3	12
26	Efficient global sensitivity analysis for flow-induced vibration of a nuclear reactor assembly using Kriging surrogates. Nuclear Engineering and Design, 2019, 341, 1-15.	0.8	17
27	Efficient Monte Carlo resampling for probability measure changes from Bayesian updating. Probabilistic Engineering Mechanics, 2019, 55, 54-66.	1.3	18
28	Variance-based simplex stochastic collocation with model order reduction for high-dimensional systems. International Journal for Numerical Methods in Engineering, 2019, 117, 1079-1116.	1.5	4
29	Adaptive Monte Carlo analysis for strongly nonlinear stochastic systems. Reliability Engineering and System Safety, 2018, 175, 207-224.	5.1	21
30	Uncertainty quantification for complex systems with very high dimensional response using Grassmann manifold variations. Journal of Computational Physics, 2018, 364, 393-415.	1.9	10
31	The effect of prior probabilities on quantification and propagation of imprecise probabilities resulting from small datasets. Computer Methods in Applied Mechanics and Engineering, 2018, 334, 483-506.	3.4	26
32	On the quantification and efficient propagation of imprecise probabilities resulting from small datasets. Mechanical Systems and Signal Processing, 2018, 98, 465-483.	4.4	63
33	Efficient Uncertainty Propagation for High-Fidelity Simulations With Large Parameter Spaces: Application to Stiffened Plate Buckling. Journal of Verification, Validation and Uncertainty Quantification, 2018, 3, .	0.3	1
34	Stochastic collocation approach with adaptive mesh refinement for parametric uncertainty analysis. Journal of Computational Physics, 2018, 371, 732-750.	1.9	24
35	A direct simulation method and lower-bound estimation for a class of gamma random fields with applications in modelling material properties. Probabilistic Engineering Mechanics, 2017, 47, 16-25.	1.3	18
36	Simulation of higher-order stochastic processes by spectral representation. Probabilistic Engineering Mechanics, 2017, 47, 1-15.	1.3	21

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37	Topology optimization for linear stationary stochastic dynamics: Applications to frame structures. Structural Safety, 2017, 67, 116-131.	2.8	30
38	Coarse graining atomistic simulations of plastically deforming amorphous solids. Physical Review E, 2017, 95, 053001.	0.8	38
39	Topology optimization of continuum structures subjected to filtered white noise stochastic excitations. Computer Methods in Applied Mechanics and Engineering, 2017, 324, 438-456.	3.4	18
40	Surrogate-enhanced stochastic search algorithms to identify implicitly defined functions for reliability analysis. Structural Safety, 2016, 62, 1-11.	2.8	36
41	The generalization of Latin hypercube sampling. Reliability Engineering and System Safety, 2016, 148, 96-108.	5.1	268
42	Discussion of Feng et al. (2014). "Statistical reconstruction of two-phase random media" [Comput. Struct. 137 (2014) 78-92]. Computers and Structures, 2016, 163, 83-85.	2.4	4
43	REFINED LATINIZED STRATIFIED SAMPLING: A ROBUST SEQUENTIAL SAMPLE SIZE EXTENSION METHODOLOGY FOR HIGH-DIMENSIONAL LATIN HYPERCUBE AND STRATIFIED DESIGNS. , 2016, 6, 79-97.		11
44	Targeted random sampling: a new approach for efficient reliability estimation for complex systems. International Journal of Reliability and Safety, 2015, 9, 174.	0.2	7
45	Refined Stratified Sampling for efficient Monte Carlo based uncertainty quantification. Reliability Engineering and System Safety, 2015, 142, 310-325.	5.1	85
46	Finite Element Modeling of Fatigue in Fiber-Metal Laminates. AIAA Journal, 2015, 53, 2228-2236.	1.5	4
47	Cohesive zone modeling and calibration for mode I tearing of large ductile plates. Engineering Fracture Mechanics, 2015, 147, 293-305.	2.0	44
48	Modeling strongly non-Gaussian non-stationary stochastic processes using the Iterative Translation Approximation Method and Karhunen-Loève expansion. Computers and Structures, 2015, 161, 31-42.	2.4	72
49	Determining evolutionary spectra from non-stationary autocorrelation functions. Probabilistic Engineering Mechanics, 2015, 41, 73-88.	1.3	17
50	Mapping model validation metrics to subject matter expert scores for model adequacy assessment. Reliability Engineering and System Safety, 2014, 132, 9-19.	5.1	18
51	Estimation of evolutionary spectra for simulation of non-stationary and non-Gaussian stochastic processes. Computers and Structures, 2013, 126, 149-163.	2.4	48
52	A simple and efficient methodology to approximate a general non-Gaussian stationary stochastic vector process by a translation process with applications in wind velocity simulation. Probabilistic Engineering Mechanics, 2013, 31, 19-29.	1.3	61
53	Simulations of ductile fracture in an idealized ship grounding scenario using phenomenological damage and cohesive zone models. Computational Materials Science, 2013, 80, 79-95.	1.4	36
54	Characterization of the Pressure Wave Emitted From Implosion of Submerged Cylindrical Shell Structures. , 2012, , .		0

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55	A simple and efficient methodology to approximate a general non-Gaussian stationary stochastic process by a translation process. Probabilistic Engineering Mechanics, 2011, 26, 511-519.	1.3	132
56	A Survey of Unsupervised Learning Methods for High-Dimensional Uncertainty Quantification in Black-Box-Type Problems. SSRN Electronic Journal, 0, , .	0.4	2
57	Grassmannian diffusion maps based surrogate modeling via geometric harmonics. International Journal for Numerical Methods in Engineering, 0, , .	1.5	4