Benjamin Peherstorfer

List of Publications by Year
in descending order

39 papers	**2,472** citations	331670 **21** h-index	377865 **34** g-index
40 all docs	**40** docs citations	**40** times ranked	**1483** citing authors

#	Article	IF	Citations
1	Survey of Multifidelity Methods in Uncertainty Propagation, Inference, and Optimization. SIAM Review, 2018, 60, 550-591.	9.5	513
2	Data-driven operator inference for nonintrusive projection-based model reduction. Computer Methods in Applied Mechanics and Engineering, 2016, 306, 196-215.	6.6	222
3	Projection-based model reduction: Formulations for physics-based machine learning. Computers and Fluids, 2019, 179, 704-717.	2.5	210
4	Localized Discrete Empirical Interpolation Method. SIAM Journal of Scientific Computing, 2014, 36, A168-A192.	2.8	168
5	Optimal Model Management for Multifidelity Monte Carlo Estimation. SIAM Journal of Scientific Computing, 2016, 38, A3163-A3194.	2.8	144
6	Dynamic data-driven reduced-order models. Computer Methods in Applied Mechanics and Engineering, 2015, 291, 21-41.	6.6	143
7	Online Adaptive Model Reduction for Nonlinear Systems via Low-Rank Updates. SIAM Journal of Scientific Computing, 2015, 37, A2123-A2150.	2.8	140
8	Lift & Learn: Physics-informed machine learning for large-scale nonlinear dynamical systems. Physica D: Nonlinear Phenomena, 2020, 406, 132401.	2.8	139
9	Spatially adaptive sparse grids for high-dimensional data-driven problems. Journal of Complexity, 2010, 26, 508-522.	1.3	91
10	Multifidelity importance sampling. Computer Methods in Applied Mechanics and Engineering, 2016, 300, 490-509.	6.6	91
11	Operator inference for non-intrusive model reduction of systems with non-polynomial nonlinear terms. Computer Methods in Applied Mechanics and Engineering, 2020, 372, 113433.	6.6	58
12	Model Reduction for Transport-Dominated Problems via Online Adaptive Bases and Adaptive Sampling. SIAM Journal of Scientific Computing, 2020, 42, A2803-A2836.	2.8	56
13	Analysis of Car Crash Simulation Data with Nonlinear Machine Learning Methods. Procedia Computer Science, 2013, 18, 621-630.	2.0	47
14	Data-Driven Reduced Model Construction with Time-Domain Loewner Models. SIAM Journal of Scientific Computing, 2017, 39, A2152-A2178.	2.8	47
15	Geometric Subspace Updates with Applications to Online Adaptive Nonlinear Model Reduction. SIAM Journal on Matrix Analysis and Applications, 2018, 39, 234-261.	1.4	46
16	Stability of Discrete Empirical Interpolation and Gappy Proper Orthogonal Decomposition with Randomized and Deterministic Sampling Points. SIAM Journal of Scientific Computing, 2020, 42, A2837-A2864.	2.8	37
17	Combining multiple surrogate models to accelerate failure probability estimation with expensive high-fidelity models. Journal of Computational Physics, 2017, 341, 61-75.	3.8	34
18	Detecting and Adapting to Parameter Changes for Reduced Models of Dynamic Data-driven Application Systems. Procedia Computer Science, 2015, 51, 2553-2562.	2.0	32

#	Article	IF	Citations
19	Multifidelity Preconditioning of the Cross-Entropy Method for Rare Event Simulation and Failure Probability Estimation. SIAM-ASA Journal on Uncertainty Quantification, 2018, 6, 737-761.	2.0	31
20	Sampling Low-Dimensional Markovian Dynamics for Preasymptotically Recovering Reduced Models from Data with Operator Inference. SIAM Journal of Scientific Computing, 2020, 42, A3489-A3515.	2.8	29
21	Multifidelity Monte Carlo Estimation with Adaptive Low-Fidelity Models. SIAM-ASA Journal on Uncertainty Quantification, 2019, 7, 579-603.	2.0	23
22	Multifidelity Monte Carlo estimation for large-scale uncertainty propagation. , 2018, , .		22
23	Dynamic data-driven model reduction: adapting reduced models from incomplete data. Advanced Modeling and Simulation in Engineering Sciences, 2016, 3, .	1.7	21
24	Multifidelity probability estimation via fusion of estimators. Journal of Computational Physics, 2019, 392, 385-402.	3.8	17
25	Feedback Control for Systems with Uncertain Parameters Using Online-Adaptive Reduced Models. SIAM Journal on Applied Dynamical Systems, 2017, 16, 1563-1586.	1.6	16
26	Convergence analysis of multifidelity Monte Carlo estimation. Numerische Mathematik, 2018, 139, 683-707.	1.9	14
27	Selected Recent Applications of Sparse Grids. Numerical Mathematics, 2015, 8, 47-77.	1.3	12
28	Data-driven low-fidelity models for multi-fidelity Monte Carlo sampling in plasma micro-turbulence analysis. Journal of Computational Physics, 2022, 451, 110898.	3.8	9
29	A transport-based multifidelity preconditioner for Markov chain Monte Carlo. Advances in Computational Mathematics, 2019, 45, 2321-2348.	1.6	8
30	Probabilistic error estimation for non-intrusive reduced models learned from data of systems governed by linear parabolic partial differential equations. ESAIM: Mathematical Modelling and Numerical Analysis, 2021, 55, 735-761.	1.9	8
31	Accelerating the estimation of collisionless energetic particle confinement statistics in stellarators using multifidelity Monte Carlo. Nuclear Fusion, 2022, 62, 076019.	3.5	8
32	Operator Inference of Non-Markovian Terms for Learning Reduced Models from Partially Observed State Trajectories. Journal of Scientific Computing, 2021, 88, 1.	2.3	7
33	A Sparse-Grid-Based Out-of-Sample Extension for Dimensionality Reduction and Clustering with Laplacian Eigenmaps. Lecture Notes in Computer Science, 2011, , 112-121.	1.3	7
34	A Multigrid Method for Adaptive Sparse Grids. SIAM Journal of Scientific Computing, 2015, 37, S51-S70.	2.8	5
35	Learning Low-Dimensional Dynamical-System Models from Noisy Frequency-Response Data with Loewner Rational Interpolation. , 2022, , 39-57.		5
36	Fast Insight into High-Dimensional Parametrized Simulation Data. , 2012, , .		4

#	Article	IF	Citations
37	Multifidelity Cross-Entropy Estimation of Conditional Value-at-Risk for Risk-Averse Design Optimization. , 2020, , .		3
38	Quasi-Optimal Sampling to Learn Basis Updates for Online Adaptive Model Reduction with Adaptive Empirical Interpolation. , 2020, , .		2
39	Classification with Probability Density Estimation on Sparse Grids. Lecture Notes in Computational Science and Engineering, 2014, , 255-270.	0.3	0