Andrew Stuart

List of Publications by Year
in descending order

65 papers	4,362 citations	159585 30 h-index	128289 60 g-index
68 all docs	68 docs citations	68 times ranked	2652 citing authors

#	Article	IF	Citations
1	A Bayesian approach to Lagrangian data assimilation. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 60, 336.	1.7	38
2	A learning-based multiscale method and its application to inelastic impact problems. Journal of the Mechanics and Physics of Solids, 2022, 158, 104668.	4.8	23
3	Derivative-Free Bayesian Inversion Using Multiscale Dynamics. SIAM Journal on Applied Dynamical Systems, 2022, 21, 284-326.	1.6	2
4	Consensusâ€based sampling. Studies in Applied Mathematics, 2022, 148, 1069-1140.	2.4	7
5	Iterated Kalman methodology for inverse problems. Journal of Computational Physics, 2022, 463, 111262.	3.8	14
6	Kernel Analog Forecasting: Multiscale Test Problems. Multiscale Modeling and Simulation, 2021, 19, 1011-1040.	1.6	13
7	Consistency of empirical Bayes and kernel flow for hierarchical parameter estimation. Mathematics of Computation, 2021, 90, 2527-2578.	2.1	12
8	Ensemble Kalman methods with constraints. Inverse Problems, 2019, 35, 095007.	2.0	36
9	Strong convergence rates of probabilistic integrators for ordinary differential equations. Statistics and Computing, 2019, 29, 1265-1283.	1.5	16
10	Iterative updating of model error for Bayesian inversion. Inverse Problems, 2018, 34, 025008.	2.0	31
11	Convergence analysis of ensemble Kalman inversion: the linear, noisy case. Applicable Analysis, 2018, 97, 107-123.	1.3	44
12	Mechanistic machine learning: how data assimilation leverages physiologic knowledge using Bayesian inference to forecast the future, infer the present, and phenotype. Journal of the American Medical Informatics Association: JAMIA, 2018, 25, 1392-1401.	4.4	30
13	Quasi-Monte Carlo and Multilevel Monte Carlo Methods for Computing Posterior Expectations in Elliptic Inverse Problems. SIAM-ASA Journal on Uncertainty Quantification, 2017, 5, 493-518.	2.0	35
14	Importance Sampling: Intrinsic Dimension and Computational Cost. Statistical Science, 2017, 32, .	2.8	76
15	Gaussian Approximations for Transition Paths in Brownian Dynamics. SIAM Journal on Mathematical Analysis, 2017, 49, 3005-3047.	1.9	13
16	Earth System Modeling 2.0: A Blueprint for Models That Learn From Observations and Targeted Highâ€Resolution Simulations. Geophysical Research Letters, 2017, 44, 12,396.	4.0	197
17	Statistical analysis of differential equations: introducing probability measures on numerical solutions. Statistics and Computing, 2017, 27, 1065-1082.	1.5	43
18	Gaussian Approximations for Probability Measures on R^d. SIAM-ASA Journal on Uncertainty Quantification, 2017, 5, 1136-1165.	2.0	13

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19	Derivation and analysis of simplified filters. Communications in Mathematical Sciences, 2017, 15, 413-450.	1.0	3
20	A Bayesian level set method for geometric inverse problems. Interfaces and Free Boundaries, 2016, 18, 181-217.	0.8	45
21	MAP estimators for piecewise continuous inversion. Inverse Problems, 2016, 32, 105003.	2.0	13
22	Kullback–Leibler Approximation for Probability Measures on Infinite Dimensional Spaces. SIAM Journal on Mathematical Analysis, 2015, 47, 4091-4122.	1.9	30
23	Algorithms for Kullback–Leibler Approximation of Probability Measures in Infinite Dimensions. SIAM Journal of Scientific Computing, 2015, 37, A2733-A2757.	2.8	30
24	A Multiscale Analysis of Diffusions on Rapidly Varying Surfaces. Journal of Nonlinear Science, 2015, 25, 389-449.	2.1	4
25	Data Assimilation. Texts in Applied Mathematics, 2015, , .	0.4	186
26	Analysis of the 3DVAR filter for the partially observed Lorenz'63 model. Discrete and Continuous Dynamical Systems, 2014, 34, 1061-1078.	0.9	30
27	MCMC Methods for Functions: Modifying Old Algorithms to Make Them Faster. Statistical Science, 2013, 28, .	2.8	353
28	MAP estimators and their consistency in Bayesian nonparametric inverse problems. Inverse Problems, 2013, 29, 095017.	2.0	100
29	Optimal tuning of the hybrid Monte Carlo algorithm. Bernoulli, 2013, 19, .	1.3	147
30	Nonparametric estimation of diffusions: a differential equations approach. Biometrika, 2012, 99, 511-531.	2.4	43
31	MCMC for the evaluation of Gaussian approximations to Bayesian inverse problems in groundwater flow. , 2012, , .		1
32	Sparse deterministic approximation of Bayesian inverse problems. Inverse Problems, 2012, 28, 045003.	2.0	74
33	Evaluating Data Assimilation Algorithms. Monthly Weather Review, 2012, 140, 3757-3782.	1.4	85
34	Î“-Limit for Transition Paths of Maximal Probability. Journal of Statistical Physics, 2012, 146, 955-974.	1.2	11
35	Variational data assimilation using targetted random walks. International Journal for Numerical Methods in Fluids, 2012, 68, 403-421.	1.6	13
36	Besov priors for Bayesian inverse problems. Inverse Problems and Imaging, 2012, 6, 183-200.	1.1	57

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37	Uncertainty Quantification and Weak Approximation of an Elliptic Inverse Problem. SIAM Journal on Numerical Analysis, 2011, 49, 2524-2542.	2.3	58
38	A note on diffusion limits of chaotic skew-product flows. Nonlinearity, 2011, 24, 1361-1367.	1.4	56
39	Kalman filtering and smoothing for linear wave equations with model error. Inverse Problems, 2011, 27, 095008.	2.0	6
40	Random-Weight Particle Filtering of Continuous Time Processes. Journal of the Royal Statistical Society Series B: Statistical Methodology, 2010, 72, 497-512.	2.2	28
41	The Acceptance Probability of the Hybrid Monte Carlo Method in High-Dimensional Problems. AIP Conference Proceedings, 2010, , .	0.4	6
42	Inverse problems: A Bayesian perspective. Acta Numerica, 2010, 19, 451-559.	10.7	1,065
43	Approximation of Bayesian Inverse Problems for PDEs. SIAM Journal on Numerical Analysis, 2010, 48, 322-345.	2.3	87
44	Transition paths in molecules at finite temperature. Journal of Chemical Physics, 2010, 132, .	3.0	29
45	Approximation of Inverse Problems. , 2009, , .		2
46	Bayesian inverse problems for functions and applications to fluid mechanics. Inverse Problems, 2009, 25, 115008.	2.0	110
47	Optimal scalings for local Metropolisâ€“Hastings chains on nonproduct targets in high dimensions. Annals of Applied Probability, 2009, 19, .	1.3	56
48	Computational Complexity of Metropolis-Hastings Methods in High Dimensions. , 2009, , 61-71.		5
49	Greenâ€™s Functions by Monte Carlo. , 2009, , 627-636.		0
50	Data assimilation: Mathematical and statistical perspectives. International Journal for Numerical Methods in Fluids, 2008, 56, 1033-1046.	1.6	52
51	MCMC METHODS FOR DIFFUSION BRIDGES. Stochastics and Dynamics, 2008, 08, 319-350.	1.2	113
52	Analysis of SPDEs arising in path sampling part II: The nonlinear case. Annals of Applied Probability, 2007, 17, .	1.3	70
53	Parameter Estimation for Multiscale Diffusions. Journal of Statistical Physics, 2007, 127, 741-781.	1.2	83
54	The Moment Map: Nonlinear Dynamics of Density Evolution via a Few Moments. SIAM Journal on Applied Dynamical Systems, 2006, 5, 403-434.	1.6	17

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55	An adaptive Euler-Maruyama scheme for SDEs: convergence and stability. IMA Journal of Numerical Analysis, 2006, 27, 479-506.	2.9	55
56	Analysis of White Noise Limits for Stochastic Systems with Two Fast Relaxation Times. Multiscale Modeling and Simulation, 2005, 4, 1-35.	1.6	21
57	Analysis of SPDEs arising in path sampling. Part I: The Gaussian case. Communications in Mathematical Sciences, 2005, 3, 587-603.	1.0	51
58	Extracting macroscopic dynamics: model problems and algorithms. Nonlinearity, 2004, 17, R55-R127.	1.4	258
59	ItÃ´ versus Stratonovich white-noise limits for systems with inertia and colored multiplicative noise. Physical Review E, 2004, 70, 036120.	2.1	80
60	White Noise Limits for Inertial Particles in a Random Field. Multiscale Modeling and Simulation, 2003, 1, 527-553.	1.6	29
61	INERTIAL PARTICLES IN A RANDOM FIELD. Stochastics and Dynamics, 2002, 02, 295-310.	1.2	12
62	A model for preferential concentration. Physics of Fluids, 2002, 14, 4352-4361.	4.0	76
63	LONG-TERM BEHAVIOUR OF LARGE MECHANICAL SYSTEMS WITH RANDOM INITIAL DATA. Stochastics and Dynamics, 2002, 02, 533-562.	1.2	34
64	Analysis and Experiments for a Computational Model of a Heat Bath. Journal of Statistical Physics, 1999, 97, 687-723.	1.2	18
65	Sampling conditioned diffusions. , 0, , 159-186.		16