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	Inverse problems: A Bayesian perspective. Acta Numerica, 2010, 19, 451-559.	10.7	1,065
2	MCMC Methods for Functions: Modifying Old Algorithms to Make Them Faster. Statistical Science, 2013, 28, .	2.8	353
3	Extracting macroscopic dynamics: model problems and algorithms. Nonlinearity, 2004, 17, R55-R127.	1.4	258
4	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
5	Data Assimilation. Texts in Applied Mathematics, 2015, , .	0.4	186
6	Optimal tuning of the hybrid Monte Carlo algorithm. Bernoulli, 2013, 19, .	1.3	147
7	MCMC METHODS FOR DIFFUSION BRIDGES. Stochastics and Dynamics, 2008, 08, 319-350.	1.2	113
8	Bayesian inverse problems for functions and applications to fluid mechanics. Inverse Problems, 2009, 25, 115008.	2.0	110
9	MAP estimators and their consistency in Bayesian nonparametric inverse problems. Inverse Problems, 2013, 29, 095017.	2.0	100
10	Approximation of Bayesian Inverse Problems for PDEs. SIAM Journal on Numerical Analysis, 2010, 48, 322-345.	2.3	87
11	Evaluating Data Assimilation Algorithms. Monthly Weather Review, 2012, 140, 3757-3782.	1.4	85
12	Parameter Estimation for Multiscale Diffusions. Journal of Statistical Physics, 2007, 127, 741-781.	1.2	83
13	ItÃ´ versus Stratonovich white-noise limits for systems with inertia and colored multiplicative noise. Physical Review E, 2004, 70, 036120.	2.1	80
14	A model for preferential concentration. Physics of Fluids, 2002, 14, 4352-4361.	4.0	76
15	Importance Sampling: Intrinsic Dimension and Computational Cost. Statistical Science, 2017, 32, .	2.8	76
16	Sparse deterministic approximation of Bayesian inverse problems. Inverse Problems, 2012, 28, 045003.	2.0	74
17	Analysis of SPDEs arising in path sampling part II: The nonlinear case. Annals of Applied Probability, 2007, 17, .	1.3	70
18	Uncertainty Quantification and Weak Approximation of an Elliptic Inverse Problem. SIAM Journal on Numerical Analysis, 2011, 49, 2524-2542.	2.3	58

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19	Besov priors for Bayesian inverse problems. Inverse Problems and Imaging, 2012, 6, 183-200.	1.1	57
20	Optimal scalings for local Metropolisâ€“Hastings chains on nonproduct targets in high dimensions. Annals of Applied Probability, 2009, 19, .	1.3	56
21	A note on diffusion limits of chaotic skew-product flows. Nonlinearity, 2011, 24, 1361-1367.	1.4	56
22	An adaptive Euler-Maruyama scheme for SDEs: convergence and stability. IMA Journal of Numerical Analysis, 2006, 27, 479-506.	2.9	55
23	Data assimilation: Mathematical and statistical perspectives. International Journal for Numerical Methods in Fluids, 2008, 56, 1033-1046.	1.6	52
24	Analysis of SPDEs arising in path sampling. Part I: The Gaussian case. Communications in Mathematical Sciences, 2005, 3, 587-603.	1.0	51
25	A Bayesian level set method for geometric inverse problems. Interfaces and Free Boundaries, 2016, 18, 181-217.	0.8	45
26	Convergence analysis of ensemble Kalman inversion: the linear, noisy case. Applicable Analysis, 2018, 97, 107-123.	1.3	44
27	Nonparametric estimation of diffusions: a differential equations approach. Biometrika, 2012, 99, 511-531.	2.4	43
28	Statistical analysis of differential equations: introducing probability measures on numerical solutions. Statistics and Computing, 2017, 27, 1065-1082.	1.5	43
29	A Bayesian approach to Lagrangian data assimilation. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 60, 336.	1.7	38
30	Ensemble Kalman methods with constraints. Inverse Problems, 2019, 35, 095007.	2.0	36
31	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
32	LONG-TERM BEHAVIOUR OF LARGE MECHANICAL SYSTEMS WITH RANDOM INITIAL DATA. Stochastics and Dynamics, 2002, 02, 533-562.	1.2	34
33	Iterative updating of model error for Bayesian inversion. Inverse Problems, 2018, 34, 025008.	2.0	31
34	Kullback–Leibler Approximation for Probability Measures on Infinite Dimensional Spaces. SIAM Journal on Mathematical Analysis, 2015, 47, 4091-4122.	1.9	30
35	Algorithms for Kullback–Leibler Approximation of Probability Measures in Infinite Dimensions. SIAM Journal of Scientific Computing, 2015, 37, A2733-A2757.	2.8	30
36	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

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37	Analysis of the 3DVAR filter for the partially observed Lorenz'63 model. Discrete and Continuous Dynamical Systems, 2014, 34, 1061-1078.	0.9	30
38	White Noise Limits for Inertial Particles in a Random Field. Multiscale Modeling and Simulation, 2003, 1, 527-553.	1.6	29
39	Transition paths in molecules at finite temperature. Journal of Chemical Physics, 2010, 132, .	3.0	29
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	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
42	Analysis of White Noise Limits for Stochastic Systems with Two Fast Relaxation Times. Multiscale Modeling and Simulation, 2005, 4, 1-35.	1.6	21
43	Analysis and Experiments for a Computational Model of a Heat Bath. Journal of Statistical Physics, 1999, 97, 687-723.	1.2	18
44	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
45	Sampling conditioned diffusions. , 0, , 159-186.		16
46	Strong convergence rates of probabilistic integrators for ordinary differential equations. Statistics and Computing, 2019, 29, 1265-1283.	1.5	16
47	Iterated Kalman methodology for inverse problems. Journal of Computational Physics, 2022, 463, 111262.	3.8	14
48	Variational data assimilation using targetted random walks. International Journal for Numerical Methods in Fluids, 2012, 68, 403-421.	1.6	13
49	MAP estimators for piecewise continuous inversion. Inverse Problems, 2016, 32, 105003.	2.0	13
50	Gaussian Approximations for Transition Paths in Brownian Dynamics. SIAM Journal on Mathematical Analysis, 2017, 49, 3005-3047.	1.9	13
51	Gaussian Approximations for Probability Measures on R^d. SIAM-ASA Journal on Uncertainty Quantification, 2017, 5, 1136-1165.	2.0	13
52	Kernel Analog Forecasting: Multiscale Test Problems. Multiscale Modeling and Simulation, 2021, 19, 1011-1040.	1.6	13
53	INERTIAL PARTICLES IN A RANDOM FIELD. Stochastics and Dynamics, 2002, 02, 295-310.	1.2	12
54	Consistency of empirical Bayes and kernel flow for hierarchical parameter estimation. Mathematics of Computation, 2021, 90, 2527-2578.	2.1	12

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55	Î“-Limit for Transition Paths of Maximal Probability. Journal of Statistical Physics, 2012, 146, 955-974.	1.2	11
56	Consensusâ€based sampling. Studies in Applied Mathematics, 2022, 148, 1069-1140.	2.4	7
57	The Acceptance Probability of the Hybrid Monte Carlo Method in High-Dimensional Problems. AIP Conference Proceedings, 2010, , .	0.4	6
58	Kalman filtering and smoothing for linear wave equations with model error. Inverse Problems, 2011, 27, 095008.	2.0	6
59	Computational Complexity of Metropolis-Hastings Methods in High Dimensions. , 2009, , 61-71.		5
60	A Multiscale Analysis of Diffusions on Rapidly Varying Surfaces. Journal of Nonlinear Science, 2015, 25, 389-449.	2.1	4
61	Derivation and analysis of simplified filters. Communications in Mathematical Sciences, 2017, 15, 413-450.	1.0	3
62	Approximation of Inverse Problems. , 2009, , .		2
63	Derivative-Free Bayesian Inversion Using Multiscale Dynamics. SIAM Journal on Applied Dynamical Systems, 2022, 21, 284-326.	1.6	2
64	MCMC for the evaluation of Gaussian approximations to Bayesian inverse problems in groundwater flow. , 2012, , .		1
65	Greenâ€™s Functions by Monte Carlo. , 2009, , 627-636.		0