

Sebastian Reich

List of Publications by Year in descending order

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117
papers

4,430
citations

117625

34
h-index

133252

59
g-index

129
all docs

129
docs citations

129
times ranked

2175
citing authors

#	ARTICLE	IF	CITATIONS
1	Data assimilation in dynamical cognitive science. Trends in Cognitive Sciences, 2022, 26, 99-102.	7.8	4
2	GP-ETAS: semiparametric Bayesian inference for the spatio-temporal epidemic type aftershock sequence model. Statistics and Computing, 2022, 32, 1.	1.5	7
3	Randomized maximum likelihood based posterior sampling. Computational Geosciences, 2022, 26, 217-239.	2.4	4
4	Datenassimilation: Die nahtlose Verschmelzung von Daten und Modellen. Mitteilungen Der Deutschen Mathematiker-Vereinigung, 2022, 30, 108-112.	0.0	0
5	Sequential Data Assimilation of the Stochastic SEIR Epidemic Model for Regional COVID-19 Dynamics. Bulletin of Mathematical Biology, 2021, 83, 1.	1.9	113
6	Fokker-Planck Particle Systems for Bayesian Inference: Computational Approaches. SIAM-ASA Journal on Uncertainty Quantification, 2021, 9, 446-482.	2.0	14
7	Balanced data assimilation for highly oscillatory mechanical systems. Communications in Applied Mathematics and Computational Science, 2021, 16, 119-154.	1.8	3
8	Forecast verification: Relating deterministic and probabilistic metrics. Quarterly Journal of the Royal Meteorological Society, 2021, 147, 3124-3134.	2.7	2
9	Supervised learning from noisy observations: Combining machine-learning techniques with data assimilation. Physica D: Nonlinear Phenomena, 2021, 423, 132911.	2.8	42
10	Spectral Convergence of Diffusion Maps: Improved Error Bounds and an Alternative Normalization. SIAM Journal on Numerical Analysis, 2021, 59, 1687-1734.	2.3	14
11	Combining machine learning and data assimilation to forecast dynamical systems from noisy partial observations. Chaos, 2021, 31, 101103.	2.5	19
12	McKean-Vlasov SDEs in Nonlinear Filtering. SIAM Journal on Control and Optimization, 2021, 59, 4188-4215.	2.1	11
13	Convergence Tests for Transdimensional Markov Chains in Geoscience Imaging. Mathematical Geosciences, 2020, 52, 651-668.	2.4	2
14	A GNSS-R Geophysical Model Function: Machine Learning for Wind Speed Retrievals. IEEE Geoscience and Remote Sensing Letters, 2020, 17, 1333-1337.	3.1	33
15	Bayesian parameter estimation for the SWIFT model of eye-movement control during reading. Journal of Mathematical Psychology, 2020, 95, 102313.	1.8	10
16	Interacting Particle Solutions of Fokker-Planck Equations Through Gradient-Log-Density Estimation. Entropy, 2020, 22, 802.	2.2	7
17	Affine Invariant Interacting Langevin Dynamics for Bayesian Inference. SIAM Journal on Applied Dynamical Systems, 2020, 19, 1633-1658.	1.6	30
18	Ensemble Transform Algorithms for Nonlinear Smoothing Problems. SIAM Journal of Scientific Computing, 2020, 42, A87-A114.	2.8	3

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19	Impact of the Mesoscale Range on Error Growth and the Limits to Atmospheric Predictability. <i>Journals of the Atmospheric Sciences</i> , 2020, 77, 3769-3779.	1.7	6
20	A mathematical model of local and global attention in natural scene viewing. <i>PLoS Computational Biology</i> , 2020, 16, e1007880.	3.2	10
21	Atmospheric Predictability: Revisiting the Inherent Finite-Time Barrier. <i>Journals of the Atmospheric Sciences</i> , 2019, 76, 3883-3892.	1.7	5
22	State and Parameter Estimation from Observed Signal Increments. <i>Entropy</i> , 2019, 21, 505.	2.2	10
23	Evaluating Impact of Rain Attenuation on Space-borne GNSS Reflectometry Wind Speeds. <i>Remote Sensing</i> , 2019, 11, 1048.	4.0	14
24	Data assimilation: The Schrödinger perspective. <i>Acta Numerica</i> , 2019, 28, 635-711.	10.7	38
25	Particle filters for high-dimensional geoscience applications: A review. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2019, 145, 2335-2365.	2.7	128
26	Discrete gradients for computational Bayesian inference. <i>Journal of Computational Dynamics</i> , 2019, 6, 385-400.	1.1	4
27	Kalman Filter and Its Modern Extensions for the Continuous-Time Nonlinear Filtering Problem. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2018, 140, .	1.6	26
28	Can GNSS Reflectometry Detect Precipitation Over Oceans?. <i>Geophysical Research Letters</i> , 2018, 45, 12,585.	4.0	38
29	TDS-1 GNSS Reflectometry: Development and Validation of Forward Scattering Winds. <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i> , 2018, 11, 4534-4541.	4.9	21
30	Long-Time Stability and Accuracy of the Ensemble Kalman-Bucy Filter for Fully Observed Processes and Small Measurement Noise. <i>SIAM Journal on Applied Dynamical Systems</i> , 2018, 17, 1152-1181.	1.6	40
31	Second-order Accurate Ensemble Transform Particle Filters. <i>SIAM Journal of Scientific Computing</i> , 2017, 39, A1834-A1850.	2.8	15
32	Assimilation of pseudo-tree-ring-width observations into an atmospheric general circulation model. <i>Climate of the Past</i> , 2017, 13, 545-557.	3.4	17
33	Likelihood-based parameter estimation and comparison of dynamical cognitive models.. <i>Psychological Review</i> , 2017, 124, 505-524.	3.8	26
34	A Hybrid Ensemble Transform Particle Filter for Nonlinear and Spatially Extended Dynamical Systems. <i>SIAM-ASA Journal on Uncertainty Quantification</i> , 2016, 4, 592-608.	2.0	29
35	Towards the assimilation of tree-ring-width records using ensemble Kalman filtering techniques. <i>Climate Dynamics</i> , 2016, 46, 1909-1920.	3.8	11
36	Large-scale turbulence modelling via $\hat{\epsilon}$ -regularisation for atmospheric simulations. <i>Journal of Turbulence</i> , 2015, 16, 367-391.	1.4	4

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37	Nonlinear Data Assimilation. <i>Frontiers in Applied Dynamical Systems: Reviews and Tutorials</i> , 2015, , .	0.5	50
38	Multiple-time-stepping generalized hybrid Monte Carlo methods. <i>Journal of Computational Physics</i> , 2015, 280, 1-20.	3.8	13
39	Ensemble transform Kalman–Bucy filters. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2014, 140, 995-1004.	2.7	22
40	On the consistency of ensemble transform filter formulations. <i>Journal of Computational Dynamics</i> , 2014, 1, 177-189.	1.1	2
41	A Nonparametric Ensemble Transform Method for Bayesian Inference. <i>SIAM Journal of Scientific Computing</i> , 2013, 35, A2013-A2024.	2.8	97
42	An ensemble Kalman-Bucy filter for continuous data assimilation. <i>Meteorologische Zeitschrift</i> , 2012, 21, 213-219.	1.0	57
43	A Gaussian–mixture ensemble transform filter. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2012, 138, 222-233.	2.7	27
44	Hydrostatic Hamiltonian particle–mesh (HPM) methods for atmospheric modelling. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2012, 138, 1388-1399.	2.7	2
45	A multigrid solver for modeling complex interseismic stress fields. <i>Computers and Geosciences</i> , 2011, 37, 1075-1082.	4.2	1
46	A dynamical systems framework for intermittent data assimilation. <i>BIT Numerical Mathematics</i> , 2011, 51, 235-249.	2.0	68
47	Meso-GSHMC: A stochastic algorithm for meso-scale constant temperature simulations. <i>Procedia Computer Science</i> , 2011, 4, 1353-1362.	2.0	10
48	Controlling Overestimation of Error Covariance in Ensemble Kalman Filters with Sparse Observations: A Variance-Limiting Kalman Filter. <i>Monthly Weather Review</i> , 2011, 139, 2650-2667.	1.4	11
49	Evaluation of three spatial discretization schemes with the Galewsky <i>et al</i> test. <i>Atmospheric Science Letters</i> , 2010, 11, 223-228.	1.9	3
50	A localization technique for ensemble Kalman filters. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2010, 136, 701-707.	2.7	19
51	A mollified ensemble Kalman filter. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2010, 136, 1636-1643.	2.7	50
52	Phase Space Volume Conservation under Space and Time Discretization Schemes for the Shallow-Water Equations. <i>Monthly Weather Review</i> , 2010, 138, 4229-4236.	1.4	11
53	A Metropolis adjusted Nosé–Hoover thermostat. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2009, 43, 743-755.	1.9	8
54	Ensemble propagation and continuous matrix factorization algorithms. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2009, 135, 1560-1572.	2.7	14

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55	A comparison of generalized hybrid Monte Carlo methods with and without momentum flip. Journal of Computational Physics, 2009, 228, 2256-2265.	3.8	43
56	LBB stability of a mixed Galerkin finite element pair for fluid flow simulations. Journal of Computational Physics, 2009, 228, 336-348.	3.8	52
57	GSHMC: An efficient method for molecular simulation. Journal of Computational Physics, 2008, 227, 4934-4954.	3.8	49
58	Improved Sampling for Simulations of Interfacial Membrane Proteins: Application of Generalized Shadow Hybrid Monte Carlo to a Peptide Toxin/Bilayer System. Journal of Physical Chemistry B, 2008, 112, 5710-5717.	2.6	22
59	Semi-implicit methods, nonlinear balance, and regularized equations. Atmospheric Science Letters, 2007, 8, 1-6.	1.9	3
60	An explicit and conservative remapping strategy for semi-Lagrangian advection. Atmospheric Science Letters, 2007, 8, 58-63.	1.9	12
61	Linear PDEs and Numerical Methods That Preserve a Multisymplectic Conservation Law. SIAM Journal of Scientific Computing, 2006, 28, 260-277.	2.8	42
62	Numerical methods for Hamiltonian PDEs. Journal of Physics A, 2006, 39, 5287-5320.	1.6	178
63	Linearly implicit time stepping methods for numerical weather prediction. BIT Numerical Mathematics, 2006, 46, 607-616.	2.0	10
64	An improved regularization for time-staggered discretization and its link to the semi-implicit method. Atmospheric Science Letters, 2006, 7, 21-25.	1.9	8
65	Analysis of a regularized, time-staggered discretization applied to a vertical slice model. Atmospheric Science Letters, 2006, 7, 86-92.	1.9	2
66	Semigeostrophic Particle Motion and Exponentially Accurate Normal forms. Multiscale Modeling and Simulation, 2006, 5, 476-496.	1.6	16
67	Hamiltonian mechanics. , 2005, , 36-69.		0
68	Geometric integrators. , 2005, , 70-104.		0
69	The modified equations. , 2005, , 105-141.		0
70	Adaptive geometric integrators. , 2005, , 234-256.		0
71	Highly oscillatory problems. , 2005, , 257-286.		0
72	Hamiltonian PDEs. , 2005, , 316-356.		0

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73	Vorticity and symplecticity in Lagrangian fluid dynamics. <i>Journal of Physics A</i> , 2005, 38, 1403-1418.	1.6	28
74	Rigid body dynamics. , 2005, , 199-233.		0
75	Constrained mechanical systems. , 2005, , 169-198.		1
76	Molecular dynamics. , 2005, , 287-315.		1
77	Higher-order methods. , 2005, , 142-168.		0
78	Adiabatic Invariance and Applications: From Molecular Dynamics to Numerical Weather Prediction. <i>BIT Numerical Mathematics</i> , 2004, 44, 439-455.	2.0	19
79	Symplectic Time-Stepping for Particle Methods. <i>GAMM Mitteilungen</i> , 2004, 27, 9-24.	5.5	8
80	Hamiltonian Particle-Mesh Method for Two-Layer Shallow-Water Equations Subject to the Rigid-Lid Approximation. <i>SIAM Journal on Applied Dynamical Systems</i> , 2004, 3, 69-83.	1.6	13
81	Conservation Properties of Smoothed Particle Hydrodynamics Applied to the Shallow Water Equation. <i>BIT Numerical Mathematics</i> , 2003, 43, 41-55.	2.0	31
82	Backward error analysis for multi-symplectic integration methods. <i>Numerische Mathematik</i> , 2003, 95, 625-652.	1.9	114
83	Multi-symplectic integration methods for Hamiltonian PDEs. <i>Future Generation Computer Systems</i> , 2003, 19, 395-402.	7.5	66
84	A Particle-Mesh Method for the Shallow Water Equations Near Geostrophic Balance. <i>Journal of Computational Physics</i> , 2002, 180, 407-426.	3.8	4
85	A Test Set for Molecular Dynamics Algorithms. <i>Lecture Notes in Computational Science and Engineering</i> , 2002, , 73-103.	0.3	3
86	Multi-symplectic spectral discretizations for the Zakharov-Kuznetsov and shallow water equations. <i>Physica D: Nonlinear Phenomena</i> , 2001, 152-153, 491-504.	2.8	98
87	Computing Lyapunov exponents on a Stiefel manifold. <i>Physica D: Nonlinear Phenomena</i> , 2001, 156, 219-238.	2.8	47
88	Explicit variable step-size and time-reversible integration. <i>Applied Numerical Mathematics</i> , 2001, 39, 367-377.	2.1	35
89	Multi-symplectic integrators: numerical schemes for Hamiltonian PDEs that conserve symplecticity. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2001, 284, 184-193.	2.1	370
90	A Reversible Averaging Integrator for Multiple Time-Scale Dynamics. <i>Journal of Computational Physics</i> , 2001, 171, 95-114.	3.8	32

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91	Multi-Symplectic Runge-Kutta Collocation Methods for Hamiltonian Wave Equations. Journal of Computational Physics, 2000, 157, 473-499.	3.8	262
92	Smoothed Langevin dynamics of highly oscillatory systems. Physica D: Nonlinear Phenomena, 2000, 138, 210-224.	2.8	19
93	Finite Volume Methods for Multi-Symplectic PDES. BIT Numerical Mathematics, 2000, 40, 559-582.	2.0	16
94	Elastic molecular dynamics with self-consistent flexible constraints. Journal of Chemical Physics, 2000, 112, 7919-7929.	3.0	27
95	Preservation of adiabatic invariants under symplectic discretization. Applied Numerical Mathematics, 1999, 29, 45-55.	2.1	18
96	Multiple Time Scales in Classical and Quantum-Classical Molecular Dynamics. Journal of Computational Physics, 1999, 151, 49-73.	3.8	22
97	Backward Error Analysis for Numerical Integrators. SIAM Journal on Numerical Analysis, 1999, 36, 1549-1570.	2.3	202
98	A Time-Reversible Variable-Stepsize Integrator for Constrained Dynamics. SIAM Journal of Scientific Computing, 1999, 21, 1027-1044.	2.8	12
99	The Midpoint Scheme and Variants for Hamiltonian Systems: Advantages and Pitfalls. SIAM Journal of Scientific Computing, 1999, 21, 1045-1065.	2.8	28
100	Longer time steps for molecular dynamics. Journal of Chemical Physics, 1999, 110, 9853-9864.	3.0	164
101	On Some Difficulties in Integrating Highly Oscillatory Hamiltonian Systems. Lecture Notes in Computational Science and Engineering, 1999, , 281-296.	0.3	17
102	Symplectic Multiple-Time-Stepping Integrators for Quantum-Classical Molecular Dynamics. Lecture Notes in Computational Science and Engineering, 1999, , 412-420.	0.3	11
103	Modified potential energy functions for constrained molecular dynamics. Numerical Algorithms, 1998, 19, 213-221.	1.9	7
104	On higher-order semi-explicit symplectic partitioned Runge-Kutta methods for constrained Hamiltonian systems. Numerische Mathematik, 1997, 76, 231-247.	1.9	17
105	Explicit symplectic integration of rod dynamics. , 1997, , 368-368.		0
106	Symplectic Integration of Constrained Hamiltonian Systems by Composition Methods. SIAM Journal on Numerical Analysis, 1996, 33, 475-491.	2.3	50
107	Enhancing energy conserving methods. BIT Numerical Mathematics, 1996, 36, 122-134.	2.0	15
108	Torsion dynamics of molecular systems. Physical Review E, 1996, 53, 4176-4181.	2.1	10

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109	Integration Methods for Molecular Dynamics. The IMA Volumes in Mathematics and Its Applications, 1996, , 161-185.	0.5	58
110	Smoothed dynamics of highly oscillatory Hamiltonian systems. Physica D: Nonlinear Phenomena, 1995, 89, 28-42.	2.8	46
111	On the local qualitative behavior of differential-algebraic equations. Circuits, Systems, and Signal Processing, 1995, 14, 427-443.	2.0	42
112	Stabilization of Constrained Mechanical Systems with DAEs and Invariant Manifolds. Mechanics Based Design of Structures and Machines, 1995, 23, 135-157.	0.6	103
113	Stabilization of DAEs and invariant manifolds. Numerische Mathematik, 1994, 67, 131-149.	1.9	117
114	Momentum conserving symplectic integrators. Physica D: Nonlinear Phenomena, 1994, 76, 375-383.	2.8	63
115	On an existence and uniqueness theory for nonlinear differential-algebraic equations. Circuits, Systems, and Signal Processing, 1991, 10, 343-359.	2.0	53
116	On a geometrical interpretation of differential-algebraic equations. Circuits, Systems, and Signal Processing, 1990, 9, 367-382.	2.0	52
117	Affine-Invariant Ensemble Transform Methods for Logistic Regression. Foundations of Computational Mathematics, 0, , 1.	2.5	4