

Sebastian Reich

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

119
papers

3,384
citations

30
h-index

55
g-index

129
ext. papers

3,833
ext. citations

3.1
avg, IF

5.97
L-index

| # | Paper | IF | Citations |
|-----|--|-----|-----------|
| 119 | GP-ETAS: semiparametric Bayesian inference for the spatio-temporal epidemic type aftershock sequence model. <i>Statistics and Computing</i> , 2022 , 32, 1 | 1.8 | 2 |
| 118 | Randomized maximum likelihood based posterior sampling. <i>Computational Geosciences</i> , 2022 , 26, 217-239 | 2.7 | 2 |
| 117 | Data assimilation in dynamical cognitive science.. <i>Trends in Cognitive Sciences</i> , 2021 , | 14 | 1 |
| 116 | McKean--Vlasov SDEs in Nonlinear Filtering. <i>SIAM Journal on Control and Optimization</i> , 2021 , 59, 4188-4215 | 1.5 | 4 |
| 115 | Combining machine learning and data assimilation to forecast dynamical systems from noisy partial observations. <i>Chaos</i> , 2021 , 31, 101103 | 3.3 | 4 |
| 114 | Balanced data assimilation for highly oscillatory mechanical systems. <i>Communications in Applied Mathematics and Computational Science</i> , 2021 , 16, 119-154 | 1.1 | 0 |
| 113 | Forecast verification: Relating deterministic and probabilistic metrics. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2021 , 147, 3124-3134 | 6.4 | 0 |
| 112 | Fokker--Planck Particle Systems for Bayesian Inference: Computational Approaches. <i>SIAM-ASA Journal on Uncertainty Quantification</i> , 2021 , 9, 446-482 | 1.8 | 10 |
| 111 | Supervised learning from noisy observations: Combining machine-learning techniques with data assimilation. <i>Physica D: Nonlinear Phenomena</i> , 2021 , 423, 132911 | 3.3 | 11 |
| 110 | Spectral Convergence of Diffusion Maps: Improved Error Bounds and an Alternative Normalization. <i>SIAM Journal on Numerical Analysis</i> , 2021 , 59, 1687-1734 | 2.4 | 9 |
| 109 | Ensemble Transform Algorithms for Nonlinear Smoothing Problems. <i>SIAM Journal of Scientific Computing</i> , 2020 , 42, A87-A114 | 2.6 | 1 |
| 108 | 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 | 2.1 | 3 |
| 107 | A mathematical model of local and global attention in natural scene viewing. <i>PLoS Computational Biology</i> , 2020 , 16, e1007880 | 5 | 1 |
| 106 | A GNSS-R Geophysical Model Function: Machine Learning for Wind Speed Retrievals. <i>IEEE Geoscience and Remote Sensing Letters</i> , 2020 , 17, 1333-1337 | 4.1 | 15 |
| 105 | Bayesian parameter estimation for the SWIFT model of eye-movement control during reading. <i>Journal of Mathematical Psychology</i> , 2020 , 95, 102313 | 1.2 | 5 |
| 104 | Affine Invariant Interacting Langevin Dynamics for Bayesian Inference. <i>SIAM Journal on Applied Dynamical Systems</i> , 2020 , 19, 1633-1658 | 2.8 | 15 |
| 103 | Convergence Tests for Transdimensional Markov Chains in Geoscience Imaging. <i>Mathematical Geosciences</i> , 2020 , 52, 651-668 | 2.5 | 1 |

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| 102 | Sequential Data Assimilation of the Stochastic SEIR Epidemic Model for Regional COVID-19 Dynamics. <i>Bulletin of Mathematical Biology</i> , 2020 , 83, 1 | 2.1 | 27 |
| 101 | Atmospheric Predictability: Revisiting the Inherent Finite-Time Barrier. <i>Journals of the Atmospheric Sciences</i> , 2019 , 76, 3883-3892 | 2.1 | 3 |
| 100 | State and Parameter Estimation from Observed Signal Increments. <i>Entropy</i> , 2019 , 21, | 2.8 | 5 |
| 99 | Evaluating Impact of Rain Attenuation on Space-borne GNSS Reflectometry Wind Speeds. <i>Remote Sensing</i> , 2019 , 11, 1048 | 5 | 9 |
| 98 | Data assimilation: The Schrödinger perspective. <i>Acta Numerica</i> , 2019 , 28, 635-711 | 15.1 | 19 |
| 97 | Particle filters for high-dimensional geoscience applications: A review. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2019 , 145, 2335-2365 | 6.4 | 55 |
| 96 | Discrete gradients for computational Bayesian inference. <i>Journal of Computational Dynamics</i> , 2019 , 6, 385-400 | 2.6 | 2 |
| 95 | 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 | 2.8 | 30 |
| 94 | 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 | 14 |
| 93 | Can GNSS Reflectometry Detect Precipitation Over Oceans?. <i>Geophysical Research Letters</i> , 2018 , 45, 12,585-12,592 | 4.5 | 15 |
| 92 | 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 | 4.7 | 13 |
| 91 | Assimilation of pseudo-tree-ring-width observations into an atmospheric general circulation model. <i>Climate of the Past</i> , 2017 , 13, 545-557 | 3.9 | 11 |
| 90 | Second-order Accurate Ensemble Transform Particle Filters. <i>SIAM Journal of Scientific Computing</i> , 2017 , 39, A1834-A1850 | 2.6 | 11 |
| 89 | Likelihood-based parameter estimation and comparison of dynamical cognitive models. <i>Psychological Review</i> , 2017 , 124, 505-524 | 6.3 | 15 |
| 88 | 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 | 1.8 | 24 |
| 87 | Towards the assimilation of tree-ring-width records using ensemble Kalman filtering techniques. <i>Climate Dynamics</i> , 2016 , 46, 1909-1920 | 4.2 | 9 |
| 86 | Large-scale turbulence modelling via ϵ -regularisation for atmospheric simulations. <i>Journal of Turbulence</i> , 2015 , 16, 367-391 | 2.1 | 3 |
| 85 | Nonlinear Data Assimilation. <i>Frontiers in Applied Dynamical Systems: Reviews and Tutorials</i> , 2015 , | 0.5 | 32 |

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| 84 | Multiple-time-stepping generalized hybrid Monte Carlo methods. <i>Journal of Computational Physics</i> , 2015 , 280, 1-20 | 4.1 | 11 |
| 83 | Probabilistic Forecasting and Bayesian Data Assimilation 2015 , | | 95 |
| 82 | On the consistency of ensemble transform filter formulations. <i>Journal of Computational Dynamics</i> , 2014 , 1, 177-189 | 2.6 | |
| 81 | Ensemble transform Kalman-Bucy filters. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2014 , 140, 995-1004 | 6.4 | 19 |
| 80 | A Nonparametric Ensemble Transform Method for Bayesian Inference. <i>SIAM Journal of Scientific Computing</i> , 2013 , 35, A2013-A2024 | 2.6 | 64 |
| 79 | A Gaussian-mixture ensemble transform filter. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2012 , 138, 222-233 | 6.4 | 23 |
| 78 | Hydrostatic Hamiltonian particle-mesh (HPM) methods for atmospheric modelling. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2012 , 138, 1388-1399 | 6.4 | 1 |
| 77 | An ensemble Kalman-Bucy filter for continuous data assimilation. <i>Meteorologische Zeitschrift</i> , 2012 , 21, 213-219 | 3.1 | 43 |
| 76 | A multigrid solver for modeling complex interseismic stress fields. <i>Computers and Geosciences</i> , 2011 , 37, 1075-1082 | 4.5 | 1 |
| 75 | A dynamical systems framework for intermittent data assimilation. <i>BIT Numerical Mathematics</i> , 2011 , 51, 235-249 | 1.7 | 52 |
| 74 | Meso-GSHMC: A stochastic algorithm for meso-scale constant temperature simulations. <i>Procedia Computer Science</i> , 2011 , 4, 1353-1362 | 1.6 | 7 |
| 73 | 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 | 2.4 | 11 |
| 72 | Phase Space Volume Conservation under Space and Time Discretization Schemes for the Shallow-Water Equations. <i>Monthly Weather Review</i> , 2010 , 138, 4229-4236 | 2.4 | 11 |
| 71 | Evaluation of three spatial discretization schemes with the Galewsky et al. test. <i>Atmospheric Science Letters</i> , 2010 , 11, 223-228 | 2.4 | 3 |
| 70 | A localization technique for ensemble Kalman filters. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2010 , 136, n/a-n/a | 6.4 | 12 |
| 69 | A mollified ensemble Kalman filter. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2010 , 136, 1636-1643 | 4.1 | |
| 68 | A Metropolis adjusted Nosé-Hoover thermostat. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2009 , 43, 743-755 | 1.8 | 6 |
| 67 | Ensemble propagation and continuous matrix factorization algorithms. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2009 , 135, 1560-1572 | 6.4 | 14 |

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| 66 | A comparison of generalized hybrid Monte Carlo methods with and without momentum flip. <i>Journal of Computational Physics</i> , 2009 , 228, 2256-2265 | 4.1 | 39 |
| 65 | LBB stability of a mixed Galerkin finite element pair for fluid flow simulations. <i>Journal of Computational Physics</i> , 2009 , 228, 336-348 | 4.1 | 51 |
| 64 | Improved sampling for simulations of interfacial membrane proteins: application of generalized shadow hybrid Monte Carlo to a peptide toxin/bilayer system. <i>Journal of Physical Chemistry B</i> , 2008 , 112, 5710-7 | 3.4 | 20 |
| 63 | GSHMC: An efficient method for molecular simulation. <i>Journal of Computational Physics</i> , 2008 , 227, 4934-4954 | 4.1 | 40 |
| 62 | Semi-implicit methods, nonlinear balance, and regularized equations. <i>Atmospheric Science Letters</i> , 2007 , 8, 1-6 | 2.4 | 3 |
| 61 | An explicit and conservative remapping strategy for semi-Lagrangian advection. <i>Atmospheric Science Letters</i> , 2007 , 8, 58-63 | 2.4 | 10 |
| 60 | An improved regularization for time-staggered discretization and its link to the semi-implicit method. <i>Atmospheric Science Letters</i> , 2006 , 7, 21-25 | 2.4 | 8 |
| 59 | Analysis of a regularized, time-staggered discretization applied to a vertical slice model. <i>Atmospheric Science Letters</i> , 2006 , 7, 86-92 | 2.4 | 1 |
| 58 | Semigeostrophic Particle Motion and Exponentially Accurate Normal forms. <i>Multiscale Modeling and Simulation</i> , 2006 , 5, 476-496 | 1.8 | 14 |
| 57 | Linear PDEs and Numerical Methods That Preserve a Multisymplectic Conservation Law. <i>SIAM Journal of Scientific Computing</i> , 2006 , 28, 260-277 | 2.6 | 40 |
| 56 | Numerical methods for Hamiltonian PDEs. <i>Journal of Physics A</i> , 2006 , 39, 5287-5320 | | 150 |
| 55 | Linearly implicit time stepping methods for numerical weather prediction. <i>BIT Numerical Mathematics</i> , 2006 , 46, 607-616 | 1.7 | 9 |
| 54 | The Targeted Shadowing Hybrid Monte Carlo (TSHMC) Method. <i>Lecture Notes in Computational Science and Engineering</i> , 2006 , 141-153 | 0.3 | 9 |
| 53 | Hamiltonian mechanics 2005 , 36-69 | | |
| 52 | Geometric integrators 2005 , 70-104 | | |
| 51 | The modified equations 2005 , 105-141 | | |
| 50 | Adaptive geometric integrators 2005 , 234-256 | | |
| 49 | Highly oscillatory problems 2005 , 257-286 | | |

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| 48 | Hamiltonian PDEs 2005 , 316-356 | | |
| 47 | Vorticity and symplecticity in Lagrangian fluid dynamics. <i>Journal of Physics A</i> , 2005 , 38, 1403-1418 | | 24 |
| 46 | Rigid body dynamics 2005 , 199-233 | | |
| 45 | Constrained mechanical systems 2005 , 169-198 | | |
| 44 | Molecular dynamics 2005 , 287-315 | | 1 |
| 43 | Higher-order methods 2005 , 142-168 | | |
| 42 | Simulating Hamiltonian Dynamics 2005 , | | 193 |
| 41 | Adiabatic Invariance and Applications: From Molecular Dynamics to Numerical Weather Prediction. <i>BIT Numerical Mathematics</i> , 2004 , 44, 439-455 | 1.7 | 16 |
| 40 | Symplectic Time-Stepping for Particle Methods. <i>GAMM Mitteilungen</i> , 2004 , 27, 9-24 | 1.8 | 8 |
| 39 | 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 | 2.8 | 12 |
| 38 | Conservation Properties of Smoothed Particle Hydrodynamics Applied to the Shallow Water Equation. <i>BIT Numerical Mathematics</i> , 2003 , 43, 41-55 | 1.7 | 30 |
| 37 | Backward error analysis for multi-symplectic integration methods. <i>Numerische Mathematik</i> , 2003 , 95, 625-652 | 2.2 | 100 |
| 36 | Multi-symplectic integration methods for Hamiltonian PDEs. <i>Future Generation Computer Systems</i> , 2003 , 19, 395-402 | 7.5 | 61 |
| 35 | A Particle-Mesh Method for the Shallow Water Equations Near Geostrophic Balance. <i>Journal of Computational Physics</i> , 2002 , 180, 407-426 | 4.1 | 4 |
| 34 | A Test Set for Molecular Dynamics Algorithms. <i>Lecture Notes in Computational Science and Engineering</i> , 2002 , 73-103 | 0.3 | 3 |
| 33 | Multi-symplectic spectral discretizations for the Zakharov-Kuznetsov and shallow water equations. <i>Physica D: Nonlinear Phenomena</i> , 2001 , 152-153, 491-504 | 3.3 | 81 |
| 32 | Computing Lyapunov exponents on a Stiefel manifold. <i>Physica D: Nonlinear Phenomena</i> , 2001 , 156, 219-238 | 3.7 | 37 |
| 31 | Explicit variable step-size and time-reversible integration. <i>Applied Numerical Mathematics</i> , 2001 , 39, 367-377 | 3.7 | 30 |

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| 30 | 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 | 2.3 | 323 |
| 29 | A Reversible Averaging Integrator for Multiple Time-Scale Dynamics. <i>Journal of Computational Physics</i> , 2001 , 171, 95-114 | 4.1 | 28 |
| 28 | Multi-Symplectic Runge-Kutta Collocation Methods for Hamiltonian Wave Equations. <i>Journal of Computational Physics</i> , 2000 , 157, 473-499 | 4.1 | 232 |
| 27 | Smoothed Langevin dynamics of highly oscillatory systems. <i>Physica D: Nonlinear Phenomena</i> , 2000 , 138, 210-224 | 3.3 | 16 |
| 26 | Finite Volume Methods for Multi-Symplectic PDES. <i>BIT Numerical Mathematics</i> , 2000 , 40, 559-582 | 1.7 | 15 |
| 25 | Elastic molecular dynamics with self-consistent flexible constraints. <i>Journal of Chemical Physics</i> , 2000 , 112, 7919-7929 | 3.9 | 25 |
| 24 | Preservation of adiabatic invariants under symplectic discretization. <i>Applied Numerical Mathematics</i> , 1999 , 29, 45-55 | 2.5 | 16 |
| 23 | Multiple Time Scales in Classical and Quantum-Classical Molecular Dynamics. <i>Journal of Computational Physics</i> , 1999 , 151, 49-73 | 4.1 | 16 |
| 22 | Backward Error Analysis for Numerical Integrators. <i>SIAM Journal on Numerical Analysis</i> , 1999 , 36, 1549-1570 | 4.0 | 179 |
| 21 | A Time-Reversible Variable-Stepsize Integrator for Constrained Dynamics. <i>SIAM Journal of Scientific Computing</i> , 1999 , 21, 1027-1044 | 2.6 | 11 |
| 20 | The Midpoint Scheme and Variants for Hamiltonian Systems: Advantages and Pitfalls. <i>SIAM Journal of Scientific Computing</i> , 1999 , 21, 1045-1065 | 2.6 | 22 |
| 19 | Longer time steps for molecular dynamics. <i>Journal of Chemical Physics</i> , 1999 , 110, 9853-9864 | 3.9 | 153 |
| 18 | On Some Difficulties in Integrating Highly Oscillatory Hamiltonian Systems. <i>Lecture Notes in Computational Science and Engineering</i> , 1999 , 281-296 | 0.3 | 12 |
| 17 | Symplectic Multiple-Time-Stepping Integrators for Quantum-Classical Molecular Dynamics. <i>Lecture Notes in Computational Science and Engineering</i> , 1999 , 412-420 | 0.3 | 9 |
| 16 | Modified potential energy functions for constrained molecular dynamics. <i>Numerical Algorithms</i> , 1998 , 19, 213-221 | 2.1 | 7 |
| 15 | On higher-order semi-explicit symplectic partitioned Runge-Kutta methods for constrained Hamiltonian systems. <i>Numerische Mathematik</i> , 1997 , 76, 231-247 | 2.2 | 16 |
| 14 | Explicit symplectic integration of rod dynamics 1997 , 368-368 | | |
| 13 | Symplectic Integration of Constrained Hamiltonian Systems by Composition Methods. <i>SIAM Journal on Numerical Analysis</i> , 1996 , 33, 475-491 | 2.4 | 42 |

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| 12 | Enhancing energy conserving methods. <i>BIT Numerical Mathematics</i> , 1996 , 36, 122-134 | 1.7 | 11 |
| 11 | Torsion dynamics of molecular systems. <i>Physical Review E</i> , 1996 , 53, 4176-4181 | 2.4 | 9 |
| 10 | Integration Methods for Molecular Dynamics. <i>The IMA Volumes in Mathematics and Its Applications</i> , 1996 , 161-185 | 0.5 | 38 |
| 9 | On the local qualitative behavior of differential-algebraic equations. <i>Circuits, Systems, and Signal Processing</i> , 1995 , 14, 427-443 | 2.2 | 36 |
| 8 | Stabilization of Constrained Mechanical Systems with DAEs and Invariant Manifolds. <i>Mechanics Based Design of Structures and Machines</i> , 1995 , 23, 135-157 | | 76 |
| 7 | Smoothed dynamics of highly oscillatory Hamiltonian systems. <i>Physica D: Nonlinear Phenomena</i> , 1995 , 89, 28-42 | 3.3 | 44 |
| 6 | Stabilization of DAEs and invariant manifolds. <i>Numerische Mathematik</i> , 1994 , 67, 131-149 | 2.2 | 97 |
| 5 | Momentum conserving symplectic integrators. <i>Physica D: Nonlinear Phenomena</i> , 1994 , 76, 375-383 | 3.3 | 58 |
| 4 | On an existence and uniqueness theory for nonlinear differential-algebraic equations. <i>Circuits, Systems, and Signal Processing</i> , 1991 , 10, 343-359 | 2.2 | 37 |
| 3 | On a geometrical interpretation of differential-algebraic equations. <i>Circuits, Systems, and Signal Processing</i> , 1990 , 9, 367-382 | 2.2 | 43 |
| 2 | Affine-Invariant Ensemble Transform Methods for Logistic Regression. <i>Foundations of Computational Mathematics</i> , 1 | 2.7 | 0 |
| 1 | Sequential data assimilation of the stochastic SEIR epidemic model for regional COVID-19 dynamics | | 9 |