

# Raul F Tempone

## List of Publications by Year in descending order

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137  
papers

5,858  
citations

136885

32  
h-index

76872

74  
g-index

138  
all docs

138  
docs citations

138  
times ranked

2330  
citing authors

#	ARTICLE	IF	CITATIONS
1	A Stochastic Collocation Method for Elliptic Partial Differential Equations with Random Input Data. SIAM Journal on Numerical Analysis, 2007, 45, 1005-1034.	1.1	922
2	A Sparse Grid Stochastic Collocation Method for Partial Differential Equations with Random Input Data. SIAM Journal on Numerical Analysis, 2008, 46, 2309-2345.	1.1	819
3	Galerkin Finite Element Approximations of Stochastic Elliptic Partial Differential Equations. SIAM Journal on Numerical Analysis, 2004, 42, 800-825.	1.1	707
4	An Anisotropic Sparse Grid Stochastic Collocation Method for Partial Differential Equations with Random Input Data. SIAM Journal on Numerical Analysis, 2008, 46, 2411-2442.	1.1	426
5	Solving elliptic boundary value problems with uncertain coefficients by the finite element method: the stochastic formulation. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 1251-1294.	3.4	283
6	A Stochastic Collocation Method for Elliptic Partial Differential Equations with Random Input Data. SIAM Review, 2010, 52, 317-355.	4.2	268
7	ON THE OPTIMAL POLYNOMIAL APPROXIMATION OF STOCHASTIC PDES BY GALERKIN AND COLLOCATION METHODS. Mathematical Models and Methods in Applied Sciences, 2012, 22, .	1.7	99
8	Fast estimation of expected information gains for Bayesian experimental designs based on Laplace approximations. Computer Methods in Applied Mechanics and Engineering, 2013, 259, 24-39.	3.4	87
9	Multi-index Monte Carlo: when sparsity meets sampling. Numerische Mathematik, 2016, 132, 767-806.	0.9	82
10	Stochastic Spectral Galerkin and Collocation Methods for PDEs with Random Coefficients: A Numerical Comparison. Lecture Notes in Computational Science and Engineering, 2011, , 43-62.	0.1	77
11	A continuation multilevel Monte Carlo algorithm. BIT Numerical Mathematics, 2015, 55, 399-432.	1.0	73
12	A Stochastic Maximum Principle for Risk-Sensitive Mean-Field Type Control. IEEE Transactions on Automatic Control, 2015, 60, 2640-2649.	3.6	72
13	Analysis and implementation issues for the numerical approximation of parabolic equations with random coefficients. International Journal for Numerical Methods in Engineering, 2009, 80, 979-1006.	1.5	65
14	A systematic approach to model validation based on Bayesian updates and prediction related rejection criteria. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2517-2539.	3.4	63
15	Discrete least squares polynomial approximation with random evaluations $\hat{\mathbf{a}}^*$ application to parametric and stochastic elliptic PDEs. ESAIM: Mathematical Modelling and Numerical Analysis, 2015, 49, 815-837.	0.8	60
16	Multilevel ensemble Kalman filtering. SIAM Journal on Numerical Analysis, 2016, 54, 1813-1839.	1.1	60
17	Analysis of Discrete $L^2$ Projection on Polynomial Spaces with Random Evaluations. Foundations of Computational Mathematics, 2014, 14, 419.	1.5	58
18	Multilevel sequential Monte Carlo samplers. Stochastic Processes and Their Applications, 2017, 127, 1417-1440.	0.4	56

#	ARTICLE	IF	CITATIONS
19	SOLVING STOCHASTIC PARTIAL DIFFERENTIAL EQUATIONS BASED ON THE EXPERIMENTAL DATA. <i>Mathematical Models and Methods in Applied Sciences</i> , 2003, 13, 415-444.	1.7	54
20	Approximation of Quantities of Interest in Stochastic PDEs by the Random Discrete $L^2$ Projection on Polynomial Spaces. <i>SIAM Journal of Scientific Computing</i> , 2013, 35, A1440-A1460.	1.3	54
21	Adaptive weak approximation of stochastic differential equations. <i>Communications on Pure and Applied Mathematics</i> , 2001, 54, 1169-1214.	1.2	53
22	Theory and methodology for estimation and control of errors due to modeling, approximation, and uncertainty. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2005, 194, 195-204.	3.4	53
23	A stochastic collocation method for the second order wave equation with a discontinuous random speed. <i>Numerische Mathematik</i> , 2013, 123, 493-536.	0.9	47
24	Convergence of quasi-optimal Stochastic Galerkin methods for a class of PDES with random coefficients. <i>Computers and Mathematics With Applications</i> , 2014, 67, 732-751.	1.4	47
25	Reliability of computational science. <i>Numerical Methods for Partial Differential Equations</i> , 2007, 23, 753-784.	2.0	44
26	Fast Bayesian experimental design: Laplace-based importance sampling for the expected information gain. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018, 334, 523-553.	3.4	44
27	Bayesian inference and model comparison for metallic fatigue data. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016, 304, 171-196.	3.4	42
28	Worst case scenario analysis for elliptic problems with uncertainty. <i>Numerische Mathematik</i> , 2005, 101, 185-219.	0.9	41
29	Multi-Index Stochastic Collocation for random PDEs. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016, 306, 95-122.	3.4	40
30	Deterministic Mean-Field Ensemble Kalman Filtering. <i>SIAM Journal of Scientific Computing</i> , 2016, 38, A1251-A1279.	1.3	39
31	Validation Challenge Workshop. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2008, 197, 2375-2380.	3.4	38
32	Analytic regularity and collocation approximation for elliptic PDEs with random domain deformations. <i>Computers and Mathematics With Applications</i> , 2016, 71, 1173-1197.	1.4	36
33	Convergence of quasi-optimal sparse-grid approximation of Hilbert-space-valued functions: application to random elliptic PDEs. <i>Numerische Mathematik</i> , 2016, 134, 343-388.	0.9	33
34	Fast Bayesian optimal experimental design for seismic source inversion. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 291, 123-145.	3.4	31
35	Implementation and analysis of an adaptive multilevel Monte Carlo algorithm. <i>Monte Carlo Methods and Applications</i> , 2014, 20, 1-41.	0.3	30
36	Cost effective policies for alternative distributions of stochastic water pollution. <i>Journal of Environmental Management</i> , 2002, 66, 145-157.	3.8	29

#	ARTICLE	IF	CITATIONS
37	Convergence Rates for Adaptive Weak Approximation of Stochastic Differential Equations. <i>Stochastic Analysis and Applications</i> , 2005, 23, 511-558.	0.9	28
38	A Unified Moment-Based Approach for the Evaluation of the Outage Probability With Noise and Interference. <i>IEEE Transactions on Wireless Communications</i> , 2017, 16, 1012-1023.	6.1	27
39	Adaptive Weak Approximation of Diffusions with Jumps. <i>SIAM Journal on Numerical Analysis</i> , 2008, 46, 1732-1768.	1.1	24
40	Unified Importance Sampling Schemes for Efficient Simulation of Outage Capacity Over Generalized Fading Channels. <i>IEEE Journal on Selected Topics in Signal Processing</i> , 2016, 10, 376-388.	7.3	24
41	On the Fast and Precise Evaluation of the Outage Probability of Diversity Receivers Over $\alpha$ - $\mu$ , $\kappa$ - $\mu$ , and $\eta$ - $\mu$ Fading Channels. <i>IEEE Transactions on Wireless Communications</i> , 2018, 17, 1255-1268.	6.1	22
42	Hybrid Chernoff Tau-Leap. <i>Multiscale Modeling and Simulation</i> , 2014, 12, 581-615.	0.6	19
43	A Laplace method for under-determined Bayesian optimal experimental designs. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 285, 849-876.	3.4	19
44	Nesterov-aided stochastic gradient methods using Laplace approximation for Bayesian design optimization. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020, 363, 112909.	3.4	19
45	On NonAsymptotic Optimal Stopping Criteria in Monte Carlo Simulations. <i>SIAM Journal of Scientific Computing</i> , 2014, 36, A869-A885.	1.3	18
46	Analysis and computation of the elastic wave equation with random coefficients. <i>Computers and Mathematics With Applications</i> , 2015, 70, 2454-2473.	1.4	18
47	Convergence rates for adaptive approximation of ordinary differential equations. <i>Numerische Mathematik</i> , 2003, 96, 99-129.	0.9	17
48	Multi-index Stochastic Collocation Convergence Rates for Random PDEs with Parametric Regularity. <i>Foundations of Computational Mathematics</i> , 2016, 16, 1555-1605.	1.5	17
49	On the predictivity of pore-scale simulations: Estimating uncertainties with multilevel Monte Carlo. <i>Advances in Water Resources</i> , 2016, 95, 46-60.	1.7	17
50	A note on tools for prediction under uncertainty and identifiability of SIR-like dynamical systems for epidemiology. <i>Mathematical Biosciences</i> , 2021, 332, 108514.	0.9	17
51	Adaptive Multilevel Monte Carlo Simulation. <i>Lecture Notes in Computational Science and Engineering</i> , 2012, , 217-234.	0.1	16
52	An Adaptive Sparse Grid Algorithm for Elliptic PDEs with Lognormal Diffusion Coefficient. <i>Lecture Notes in Computational Science and Engineering</i> , 2016, , 191-220.	0.1	16
53	Multilevel hybrid Chernoff tau-leap. <i>BIT Numerical Mathematics</i> , 2016, 56, 189-239.	1.0	15
54	Smoothing the payoff for efficient computation of Basket option prices. <i>Quantitative Finance</i> , 2018, 18, 491-505.	0.9	15

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55	Adaptive weak approximation of reflected and stopped diffusions. Monte Carlo Methods and Applications, 2010, 16, 1-67.	0.3	14
56	Optimal Bayesian Experimental Design for Priors of Compact Support with Application to Shock Tube Experiments for Combustion Kinetics. International Journal for Numerical Methods in Engineering, 2016, 108, 136-155.	1.5	14
57	Bayesian inferences of the thermal properties of a wall using temperature and heat flux measurements. International Journal of Heat and Mass Transfer, 2018, 116, 417-431.	2.5	14
58	Multilevel double loop Monte Carlo and stochastic collocation methods with importance sampling for Bayesian optimal experimental design. International Journal for Numerical Methods in Engineering, 2020, 121, 3482-3503.	1.5	14
59	Convergence estimates in probability and in expectation for discrete least squares with noisy evaluations at random points. Journal of Multivariate Analysis, 2015, 142, 167-182.	0.5	13
60	Optimization of mesh hierarchies in multilevel Monte Carlo samplers. Stochastics and Partial Differential Equations: Analysis and Computations, 2016, 4, 76-112.	0.5	13
61	Multilevel and Multi-index Monte Carlo methods for the McKean-Vlasov equation. Statistics and Computing, 2018, 28, 923-935.	0.8	13
62	A variational principle for adaptive approximation of ordinary differential equations. Numerische Mathematik, 2003, 96, 131-152.	0.9	12
63	Adaptive Monte Carlo Algorithms for Stopped Diffusion. Lecture Notes in Computational Science and Engineering, 2005, , 59-88.	0.1	12
64	Formulation of the static frame problem. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2496-2499.	3.4	12
65	A stochastic multiscale method for the elastodynamic wave equation arising from fiber composites. Computer Methods in Applied Mechanics and Engineering, 2014, 276, 190-211.	3.4	12
66	On the Efficient Simulation of the Distribution of the Sum of Gamma Variates With Application to the Outage Probability Evaluation Over Fading Channels. IEEE Transactions on Communications, 2017, 65, 1839-1848.	4.9	12
67	Hierarchical adaptive sparse grids and quasi-Monte Carlo for option pricing under the rough Bergomi model. Quantitative Finance, 2020, 20, 1457-1473.	0.9	12
68	Pricing American options by exercise rate optimization. Quantitative Finance, 2020, 20, 1749-1760.	0.9	12
69	Convergence Rates for an Adaptive Dual Weighted Residual Finite Element Algorithm. BIT Numerical Mathematics, 2006, 46, 367-407.	1.0	11
70	Computation of Electromagnetic Fields Scattered From Objects With Uncertain Shapes Using Multilevel Monte Carlo Method. IEEE Journal on Multiscale and Multiphysics Computational Techniques, 2019, 4, 37-50.	1.4	11
71	A Hierarchical Bayesian Setting for an Inverse Problem in Linear Parabolic PDEs with Noisy Boundary Conditions. Bayesian Analysis, 2017, 12, .	1.6	10
72	Implied stopping rules for American basket options from Markovian projection. Quantitative Finance, 2019, 19, 371-390.	0.9	10

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73	A fast simulation method for the Log-normal sum distribution using a hazard rate twisting technique. , 2015, , .		9
74	Multilevel hybrid split-step implicit tau-leap. Numerical Algorithms, 2017, 74, 527-560.	1.1	9
75	IGA-based multi-index stochastic collocation for random PDEs on arbitrary domains. Computer Methods in Applied Mechanics and Engineering, 2019, 351, 330-350.	3.4	9
76	Mean-Field Games for Marriage. PLoS ONE, 2014, 9, e94933.	1.1	9
77	On the efficient simulation of the left-tail of the sum of correlated log-normal variates. Monte Carlo Methods and Applications, 2018, 24, 101-115.	0.3	8
78	Multilevel Monte Carlo in approximate Bayesian computation. Stochastic Analysis and Applications, 2019, 37, 346-360.	0.9	8
79	Solution of the 3D density-driven groundwater flow problem with uncertain porosity and permeability. GEM - International Journal on Geomathematics, 2020, 11, 1.	0.7	8
80	Towards automatic global error control: Computable weak error expansion for the tau-leap method. Monte Carlo Methods and Applications, 2011, 17, .	0.3	7
81	A Multilevel Adaptive Reaction-splitting Simulation Method for Stochastic Reaction Networks. SIAM Journal of Scientific Computing, 2016, 38, A2091-A2117.	1.3	7
82	On the Efficient Simulation of Outage Probability in a Log-Normal Fading Environment. IEEE Transactions on Communications, 2017, 65, 2583-2593.	4.9	7
83	Importance Sampling Estimator of Outage Probability under Generalized Selection Combining Model. , 2018, , .		7
84	On the Sum of Order Statistics and Applications to Wireless Communication Systems Performances. IEEE Transactions on Wireless Communications, 2018, 17, 7801-7813.	6.1	7
85	Ensemble-marginalized Kalman filter for linear time-dependent PDEs with noisy boundary conditions: application to heat transfer in building walls. Inverse Problems, 2018, 34, 075008.	1.0	7
86	Importance sampling for a robust and efficient multilevel Monte Carlo estimator for stochastic reaction networks. Statistics and Computing, 2020, 30, 1665-1689.	0.8	7
87	Multilevel ensemble Kalman filtering for spatio-temporal processes. Numerische Mathematik, 2021, 147, 71-125.	0.9	7
88	A Quasi-optimal Sparse Grids Procedure for Groundwater Flows. Lecture Notes in Computational Science and Engineering, 2014, , 1-16.	0.1	7
89	Comparison of Clenshawâ€Curtis and Leja Quasi-Optimal Sparse Grids for the Approximation of Random PDEs. Lecture Notes in Computational Science and Engineering, 2015, , 475-482.	0.1	7
90	Hyperbolic Differential Equations and Adaptive Numerics. Universitext, 2001, , 231-280.	0.2	7

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91	Static frame challenge problem: Summary. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2572-2577.	3.4	6
92	An Improved Hazard Rate Twisting Approach for the Statistic of the Sum of Subexponential Variates. IEEE Communications Letters, 2015, 19, 14-17.	2.5	6
93	An efficient forwardâ€“reverse expectation-maximization algorithm for statistical inference in stochastic reaction networks. Stochastic Analysis and Applications, 2016, 34, 193-231.	0.9	6
94	Spatial Poisson processes for fatigue crack initiation. Computer Methods in Applied Mechanics and Engineering, 2019, 345, 454-475.	3.4	6
95	On the generalization of the hazard rate twisting-based simulation approach. Statistics and Computing, 2018, 28, 61-75.	0.8	5
96	Multilevel Monte Carlo acceleration of seismic wave propagation under uncertainty. GEM - International Journal on Geomathematics, 2019, 10, 1.	0.7	5
97	Multilevel weighted least squares polynomial approximation. ESAIM: Mathematical Modelling and Numerical Analysis, 2020, 54, 649-677.	0.8	5
98	Generalized parallel tempering on Bayesian inverse problems. Statistics and Computing, 2021, 31, 1.	0.8	5
99	Efficient importance sampling for large sums of independent and identically distributed random variables. Statistics and Computing, 2021, 31, 1.	0.8	5
100	Sparse approximation of multilinear problems with applications to kernel-based methods in UQ. Numerische Mathematik, 2018, 139, 247-280.	0.9	4
101	Accurate Outage Probability Evaluation of Equal Gain Combining Receivers. , 2018, , .		4
102	A hybrid collocation-perturbation approach for PDEs with random domains. Advances in Computational Mathematics, 2021, 47, 1.	0.8	4
103	Diffusion approximation of LÃ©vy processes with a view towards finance. Monte Carlo Methods and Applications, 2011, 17, .	0.3	3
104	Mean-field learning for satisfactory solutions. , 2013, , .		3
105	A stochastic maximum principle for risk-sensitive mean-field-type control. , 2014, , .		3
106	An Efficient Simulation Scheme of the Outage Probability with Co-Channel Interference. , 2015, , .		3
107	Fast Outage Probability Simulation for FSO Links with a Generalized Pointing Error Model. , 2016, , .		3
108	Computable Error Estimates for Finite Element Approximations of Elliptic Partial Differential Equations with Rough Stochastic Data. SIAM Journal of Scientific Computing, 2016, 38, A3773-A3807.	1.3	3

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109	Small-noise approximation for Bayesian optimal experimental design with nuisance uncertainty. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022, 399, 115320.	3.4	3
110	Mean field interaction in biochemical reaction networks. , 2011, , .		2
111	Monte Carlo Euler approximations of HJM term structure financial models. <i>BIT Numerical Mathematics</i> , 2013, 53, 341.	1.0	2
112	Multiscale Modeling of Wear Degradation in Cylinder Liners. <i>Multiscale Modeling and Simulation</i> , 2014, 12, 396-409.	0.6	2
113	A Sparse Stochastic Collocation Technique for High-Frequency Wave Propagation with Uncertainty. <i>SIAM-ASA Journal on Uncertainty Quantification</i> , 2016, 4, 1084-1110.	1.1	2
114	A Universal Splitting Estimator for the Performance Evaluation of Wireless Communications Systems. <i>IEEE Transactions on Wireless Communications</i> , 2020, 19, 4353-4362.	6.1	2
115	An Accurate Sample Rejection Estimator of the Outage Probability With Equal Gain Combining. <i>IEEE Open Journal of the Communications Society</i> , 2020, 1, 1022-1034.	4.4	2
116	Quantifying uncertainty with a derivative tracking SDE model and application to wind power forecast data. <i>Statistics and Computing</i> , 2021, 31, 1.	0.8	2
117	Statistical learning for fluid flows: Sparse Fourier divergence-free approximations. <i>Physics of Fluids</i> , 2021, 33, 097108.	1.6	2
118	INFERENCE AND SENSITIVITY IN STOCHASTIC WIND POWER FORECAST MODELS.. , 2017, , .		2
119	Wind field reconstruction with adaptive random Fourier features. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021, 477, 20210236.	1.0	2
120	Propagation of Uncertainties in Density-Driven Flow. <i>Lecture Notes in Computational Science and Engineering</i> , 2021, , 101-126.	0.1	2
121	Principal component density estimation for scenario generation using normalizing flows. <i>Data-Centric Engineering</i> , 2022, 3, .	1.2	2
122	A unified simulation approach for the fast outage capacity evaluation over generalized fading channels. , 2015, , .		1
123	An Error Estimate for Symplectic Euler Approximation of Optimal Control Problems. <i>SIAM Journal of Scientific Computing</i> , 2015, 37, A946-A969.	1.3	1
124	An exact power series formula of the outage probability with noise and interference over generalized fading channels. , 2016, , .		1
125	On the sum of Gamma-Gamma variates with application to the fast outage probability evaluation over fading channels. , 2016, , .		1
126	Smolyak's Algorithm: A Powerful Black Box for the Acceleration of Scientific Computations. <i>Lecture Notes in Computational Science and Engineering</i> , 2018, , 201-228.	0.1	1



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127	Computable error estimates of a finite difference scheme for option pricing in exponential Lévy models. BIT Numerical Mathematics, 2014, 54, 1023-1065.	1.0	0
128	An Efficient Simulation Scheme of the Outage Probability with Co-Channel Interference. , 2014, , .		0
129	Construction of a Mean Square Error Adaptive Euler–Maruyama Method With Applications in Multilevel Monte Carlo. Springer Proceedings in Mathematics and Statistics, 2016, , 29-86.	0.1	0
130	Efficient Simulation of the Outage Probability of Multihop Systems. IEEE Photonics Journal, 2017, 9, 1-8.	1.0	0
131	Efficient outage probability evaluation of diversity receivers over $\hat{\alpha}^{-1/4}$ fading channels. , 2018, , .		0
132	Efficient Simulations for Contamination of Groundwater Aquifers under Uncertainties. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900023.	0.2	0
133	MLMC method to estimate propagation of uncertainties in electromagnetic fields scattered from objects of uncertain shapes. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000064.	0.2	0
134	Efficient Importance Sampling for the Left Tail of Positive Gaussian Quadratic Forms. IEEE Wireless Communications Letters, 2021, 10, 527-531.	3.2	0
135	Analysis and Computation of Hyperbolic PDEs with Random Data. , 2015, , 51-58.		0
136	Error analysis in Fourier methods for option pricing. Journal of Computational Finance, 2016, 21, .	0.3	0
137	A Wasserstein coupled particle filter for multilevel estimation. Stochastic Analysis and Applications, 2023, 41, 820-859.	0.9	0