# Raul F Tempone

## List of Publications by Year in Descending Order



| | | | |
|---|---|---|---|
| 122 papers | 4,578 citations | 28 h-index | 66 g-index |
| 138 ext. papers | 5,229 ext. citations | 2.9 avg, IF | 5.86 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 122 | Wind field reconstruction with adaptive random Fourier features.. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2021**, 477, 20210236 | 2.4 | |
| 121 | Efficient importance sampling for large sums of independent and identically distributed random variables. *Statistics and Computing*, **2021**, 31, 1 | 1.8 | 0 |
| 120 | Efficient Importance Sampling for the Left Tail of Positive Gaussian Quadratic Forms. *IEEE Wireless Communications Letters*, **2021**, 10, 527-531 | 5.9 | |
| 119 | A hybrid collocation-perturbation approach for PDEs with random domains. *Advances in Computational Mathematics*, **2021**, 47, 1 | 1.6 | 1 |
| 118 | A note on tools for prediction under uncertainty and identifiability of SIR-like dynamical systems for epidemiology. *Mathematical Biosciences*, **2021**, 332, 108514 | 3.9 | 8 |
| 117 | Multilevel ensemble Kalman filtering for spatio-temporal processes. *Numerische Mathematik*, **2021**, 147, 71-125 | 2.2 | 2 |
| 116 | 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 | |
| 115 | Quantifying uncertainty with a derivative tracking SDE model and application to wind power forecast data. *Statistics and Computing*, **2021**, 31, 1 | 1.8 | 0 |
| 114 | Generalized parallel tempering on Bayesian inverse problems. *Statistics and Computing*, **2021**, 31, 1 | 1.8 | 3 |
| 113 | Statistical learning for fluid flows: Sparse Fourier divergence-free approximations. *Physics of Fluids*, **2021**, 33, 097108 | 4.4 | 2 |
| 112 | Propagation of Uncertainties in Density-Driven Flow. *Lecture Notes in Computational Science and Engineering*, **2021**, 101-126 | 0.3 | |
| 111 | Hierarchical adaptive sparse grids and quasi-Monte Carlo for option pricing under the rough Bergomi model. *Quantitative Finance*, **2020**, 20, 1457-1473 | 1.6 | 6 |
| 110 | Solution of the 3D density-driven groundwater flow problem with uncertain porosity and permeability. *GEM - International Journal on Geomathematics*, **2020**, 11, 1 | 2.7 | 5 |
| 109 | Multilevel weighted least squares polynomial approximation. *ESAIM: Mathematical Modelling and Numerical Analysis*, **2020**, 54, 649-677 | 1.8 | 3 |
| 108 | Pricing American options by exercise rate optimization. *Quantitative Finance*, **2020**, 20, 1749-1760 | 1.6 | 6 |
| 107 | Nesterov-aided stochastic gradient methods using Laplace approximation for Bayesian design optimization. *Computer Methods in Applied Mechanics and Engineering*, **2020**, 363, 112909 | 5.7 | 12 |
| 106 | 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 | 2.4 | 4 |

| | | | |
|---|---|---|---|
| 105 | A Universal Splitting Estimator for the Performance Evaluation of Wireless Communications Systems. *IEEE Transactions on Wireless Communications*, **2020**, 19, 4353-4362 | 9.6 | 0 |
| 104 | An Accurate Sample Rejection Estimator of the Outage Probability With Equal Gain Combining. *IEEE Open Journal of the Communications Society*, **2020**, 1, 1022-1034 | 6.7 | 0 |
| 103 | Importance sampling for a robust and efficient multilevel Monte Carlo estimator for stochastic reaction networks. *Statistics and Computing*, **2020**, 30, 1665-1689 | 1.8 | 1 |
| 102 | Multilevel Monte Carlo in approximate Bayesian computation. *Stochastic Analysis and Applications*, **2019**, 37, 346-360 | 1.1 | 4 |
| 101 | IGA-based multi-index stochastic collocation for random PDEs on arbitrary domains. *Computer Methods in Applied Mechanics and Engineering*, **2019**, 351, 330-350 | 5.7 | 8 |
| 100 | Multilevel Monte Carlo acceleration of seismic wave propagation under uncertainty. *GEM - International Journal on Geomathematics*, **2019**, 10, 1 | 2.7 | 4 |
| 99 | 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 | 1.5 | 7 |
| 98 | Implied stopping rules for American basket options from Markovian projection. *Quantitative Finance*, **2019**, 19, 371-390 | 1.6 | 7 |
| 97 | Efficient Simulations for Contamination of Groundwater Aquifers under Uncertainties. *Proceedings in Applied Mathematics and Mechanics*, **2019**, 19, e201900023 | 0.2 | |
| 96 | Spatial Poisson processes for fatigue crack initiation. *Computer Methods in Applied Mechanics and Engineering*, **2019**, 345, 454-475 | 5.7 | 5 |
| 95 | Fast Bayesian experimental design: Laplace-based importance sampling for the expected information gain. *Computer Methods in Applied Mechanics and Engineering*, **2018**, 334, 523-553 | 5.7 | 25 |
| 94 | Sparse approximation of multilinear problems with applications to kernel-based methods in UQ. *Numerische Mathematik*, **2018**, 139, 247-280 | 2.2 | 3 |
| 93 | Multilevel and Multi-index Monte Carlo methods for the McKean Vlasov equation. *Statistics and Computing*, **2018**, 28, 923-935 | 1.8 | 7 |
| 92 | 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 | 0.4 | 7 |
| 91 | On the Fast and Precise Evaluation of the Outage Probability of Diversity Receivers Over $alpha -mu $ , $kappa -mu $ , and $eta -mu $ Fading Channels. *IEEE Transactions on Wireless Communications*, **2018**, 17, 1255-1268 | 9.6 | 14 |
| 90 | 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 | 4.9 | 11 |
| 89 | 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 | 2.3 | 2 |
| 88 | Smolyak Algorithm: A Powerful Black Box for the Acceleration of Scientific Computations. *Lecture Notes in Computational Science and Engineering*, **2018**, 201-228 | 0.3 | 1 |

| | | | |
|---|---|---|---|
| 87 | On the generalization of the hazard rate twisting-based simulation approach. *Statistics and Computing*, **2018**, 28, 61-75 | 1.8 | 2 |
| 86 | Smoothing the payoff for efficient computation of Basket option prices. *Quantitative Finance*, **2018**, 18, 491-505 | 1.6 | 10 |
| 85 | . *IEEE Transactions on Wireless Communications*, **2018**, 17, 7801-7813 | 9.6 | 4 |
| 84 | Multilevel hybrid split-step implicit tau-leap. *Numerical Algorithms*, **2017**, 74, 527-560 | 2.1 | 6 |
| 83 | On the Efficient Simulation of the Distribution of the Sum of Gamma–Gamma Variates With Application to the Outage Probability Evaluation Over Fading Channels. *IEEE Transactions on Communications*, **2017**, 65, 1839-1848 | 6.9 | 6 |
| 82 | A Hierarchical Bayesian Setting for an Inverse Problem in Linear Parabolic PDEs with Noisy Boundary Conditions. *Bayesian Analysis*, **2017**, 12, | 2.3 | 8 |
| 81 | On the Efficient Simulation of Outage Probability in a Log-Normal Fading Environment. *IEEE Transactions on Communications*, **2017**, 65, 2583-2593 | 6.9 | 4 |
| 80 | A Unified Moment-Based Approach for the Evaluation of the Outage Probability With Noise and Interference. *IEEE Transactions on Wireless Communications*, **2017**, 16, 1012-1023 | 9.6 | 15 |
| 79 | Multilevel sequential Monte Carlo samplers. *Stochastic Processes and Their Applications*, **2017**, 127, 1417-1440 | 1.1 | 42 |
| 78 | Efficient Simulation of the Outage Probability of Multihop Systems. *IEEE Photonics Journal*, **2017**, 9, 1-8 | 1.8 | |
| 77 | Multilevel hybrid Chernoff tau-leap. *BIT Numerical Mathematics*, **2016**, 56, 189-239 | 1.7 | 14 |
| 76 | Multilevel ensemble Kalman filtering. *SIAM Journal on Numerical Analysis*, **2016**, 54, 1813-1839 | 2.4 | 40 |
| 75 | Deterministic Mean-Field Ensemble Kalman Filtering. *SIAM Journal of Scientific Computing*, **2016**, 38, A1251-A1279 | 2.6 | 26 |
| 74 | 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 | 2.4 | 12 |
| 73 | 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 | 0.2 | |
| 72 | An efficient forward–reverse expectation-maximization algorithm for statistical inference in stochastic reaction networks. *Stochastic Analysis and Applications*, **2016**, 34, 193-231 | 1.1 | 2 |
| 71 | Convergence of quasi-optimal sparse-grid approximation of Hilbert-space-valued functions: application to random elliptic PDEs. *Numerische Mathematik*, **2016**, 134, 343-388 | 2.2 | 25 |
| 70 | Optimization of mesh hierarchies in multilevel Monte Carlo samplers. *Stochastics and Partial Differential Equations: Analysis and Computations*, **2016**, 4, 76-112 | 0.9 | 10 |

| | | | |
|---|---|---|---|
| 69 | Bayesian inference and model comparison for metallic fatigue data. *Computer Methods in Applied Mechanics and Engineering*, **2016**, 304, 171-196 | 5.7 | 30 |
| 68 | Multi-index Monte Carlo: when sparsity meets sampling. *Numerische Mathematik*, **2016**, 132, 767-806 | 2.2 | 61 |
| 67 | On the predictivity of pore-scale simulations: Estimating uncertainties with multilevel Monte Carlo. *Advances in Water Resources*, **2016**, 95, 46-60 | 4.7 | 14 |
| 66 | Unified Importance Sampling Schemes for Efficient Simulation of Outage Capacity Over Generalized Fading Channels. *IEEE Journal on Selected Topics in Signal Processing*, **2016**, 10, 376-388 | 7.5 | 15 |
| 65 | An Adaptive Sparse Grid Algorithm for Elliptic PDEs with Lognormal Diffusion Coefficient. *Lecture Notes in Computational Science and Engineering*, **2016**, 191-220 | 0.3 | 12 |
| 64 | A Multilevel Adaptive Reaction-splitting Simulation Method for Stochastic Reaction Networks. *SIAM Journal of Scientific Computing*, **2016**, 38, A2091-A2117 | 2.6 | 4 |
| 63 | A Sparse Stochastic Collocation Technique for High-Frequency Wave Propagation with Uncertainty. *SIAM-ASA Journal on Uncertainty Quantification*, **2016**, 4, 1084-1110 | 1.8 | 2 |
| 62 | Fast Outage Probability Simulation for FSO Links with a Generalized Pointing Error Model **2016**, | | 2 |
| 61 | Multi-index Stochastic Collocation Convergence Rates for Random PDEs with Parametric Regularity. *Foundations of Computational Mathematics*, **2016**, 16, 1555-1605 | 2.7 | 14 |
| 60 | 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 | 2.6 | 2 |
| 59 | Multi-Index Stochastic Collocation for random PDEs. *Computer Methods in Applied Mechanics and Engineering*, **2016**, 306, 95-122 | 5.7 | 30 |
| 58 | Analytic regularity and collocation approximation for elliptic PDEs with random domain deformations. *Computers and Mathematics With Applications*, **2016**, 71, 1173-1197 | 2.7 | 27 |
| 57 | An Improved Hazard Rate Twisting Approach for the Statistic of the Sum of Subexponential Variates. *IEEE Communications Letters*, **2015**, 19, 14-17 | 3.8 | 3 |
| 56 | A continuation multilevel Monte Carlo algorithm. *BIT Numerical Mathematics*, **2015**, 55, 399-432 | 1.7 | 58 |
| 55 | A Stochastic Maximum Principle for Risk-Sensitive Mean-Field Type Control. *IEEE Transactions on Automatic Control*, **2015**, 60, 2640-2649 | 5.9 | 54 |
| 54 | An Error Estimate for Symplectic Euler Approximation of Optimal Control Problems. *SIAM Journal of Scientific Computing*, **2015**, 37, A946-A969 | 2.6 | 0 |
| 53 | Fast Bayesian optimal experimental design for seismic source inversion. *Computer Methods in Applied Mechanics and Engineering*, **2015**, 291, 123-145 | 5.7 | 18 |
| 52 | A fast simulation method for the Log-normal sum distribution using a hazard rate twisting technique **2015**, | | 5 |

| | | | |
|---|---|---|---|
| 51 | Discrete least squares polynomial approximation with random evaluations application to parametric and stochastic elliptic PDEs. *ESAIM: Mathematical Modelling and Numerical Analysis*, **2015**, 49, 815-837 | 1.8 | 47 |
| 50 | Analysis and computation of the elastic wave equation with random coefficients. *Computers and Mathematics With Applications*, **2015**, 70, 2454-2473 | 2.7 | 11 |
| 49 | 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 | 1.4 | 10 |
| 48 | A Laplace method for under-determined Bayesian optimal experimental designs. *Computer Methods in Applied Mechanics and Engineering*, **2015**, 285, 849-876 | 5.7 | 15 |
| 47 | Comparison of ClenshawCurtis and Leja Quasi-Optimal Sparse Grids for the Approximation of Random PDEs. *Lecture Notes in Computational Science and Engineering*, **2015**, 475-482 | 0.3 | 5 |
| 46 | A stochastic multiscale method for the elastodynamic wave equation arising from fiber composites. *Computer Methods in Applied Mechanics and Engineering*, **2014**, 276, 190-211 | 5.7 | 11 |
| 45 | Analysis of Discrete (L^2) Projection on Polynomial Spaces with Random Evaluations. *Foundations of Computational Mathematics*, **2014**, 14, 419 | 2.7 | 47 |
| 44 | Computable error estimates of a finite difference scheme for option pricing in exponential Lvy models. *BIT Numerical Mathematics*, **2014**, 54, 1023-1065 | 1.7 | |
| 43 | Convergence of quasi-optimal Stochastic Galerkin methods for a class of PDES with random coefficients. *Computers and Mathematics With Applications*, **2014**, 67, 732-751 | 2.7 | 43 |
| 42 | A stochastic maximum principle for risk-sensitive mean-field-type control **2014**, | | 3 |
| 41 | Hybrid Chernoff Tau-Leap. *Multiscale Modeling and Simulation*, **2014**, 12, 581-615 | 1.8 | 18 |
| 40 | Multiscale Modeling of Wear Degradation in Cylinder Liners. *Multiscale Modeling and Simulation*, **2014**, 12, 396-409 | 1.8 | 2 |
| 39 | On NonAsymptotic Optimal Stopping Criteria in Monte Carlo Simulations. *SIAM Journal of Scientific Computing*, **2014**, 36, A869-A885 | 2.6 | 13 |
| 38 | Implementation and analysis of an adaptive multilevel Monte Carlo algorithm. *Monte Carlo Methods and Applications*, **2014**, 20, 1-41 | 0.4 | 22 |
| 37 | Mean-field games for marriage. *PLoS ONE*, **2014**, 9, e94933 | 3.7 | 8 |
| 36 | A Quasi-optimal Sparse Grids Procedure for Groundwater Flows. *Lecture Notes in Computational Science and Engineering*, **2014**, 1-16 | 0.3 | 6 |
| 35 | A stochastic collocation method for the second order wave equation with a discontinuous random speed. *Numerische Mathematik*, **2013**, 123, 493-536 | 2.2 | 34 |
| 34 | 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 | 5.7 | 61 |

| | | | |
|---|---|---|---|
| 33 | Approximation of Quantities of Interest in Stochastic PDEs by the Random Discrete $L^2$ Projection on Polynomial Spaces. *SIAM Journal of Scientific Computing*, **2013**, 35, A1440-A1460 | 2.6 | 51 |
| 32 | Mean-field learning for satisfactory solutions **2013**, | | 2 |
| 31 | Monte Carlo Euler approximations of HJM term structure financial models. *BIT Numerical Mathematics*, **2012**, 53, 341 | 1.7 | 1 |
| 30 | ON THE OPTIMAL POLYNOMIAL APPROXIMATION OF STOCHASTIC PDES BY GALERKIN AND COLLOCATION METHODS. *Mathematical Models and Methods in Applied Sciences*, **2012**, 22, 1250023 | 3.5 | 87 |
| 29 | Adaptive Multilevel Monte Carlo Simulation. *Lecture Notes in Computational Science and Engineering* , **2012**, 217-234 | 0.3 | 13 |
| 28 | Diffusion approximation of Lévy processes with a view towards finance. *Monte Carlo Methods and Applications*, **2011**, 17, | 0.4 | 3 |
| 27 | Towards automatic global error control: Computable weak error expansion for the tau-leap method. *Monte Carlo Methods and Applications*, **2011**, 17, | 0.4 | 7 |
| 26 | Stochastic Spectral Galerkin and Collocation Methods for PDEs with Random Coefficients: A Numerical Comparison. *Lecture Notes in Computational Science and Engineering*, **2011**, 43-62 | 0.3 | 59 |
| 25 | Adaptive weak approximation of reflected and stopped diffusions. *Monte Carlo Methods and Applications*, **2010**, 16, 1-67 | 0.4 | 11 |
| 24 | A Stochastic Collocation Method for Elliptic Partial Differential Equations with Random Input Data. *SIAM Review*, **2010**, 52, 317-355 | 7.4 | 211 |
| 23 | 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 | 2.4 | 51 |
| 22 | A Sparse Grid Stochastic Collocation Method for Partial Differential Equations with Random Input Data. *SIAM Journal on Numerical Analysis*, **2008**, 46, 2309-2345 | 2.4 | 652 |
| 21 | An Anisotropic Sparse Grid Stochastic Collocation Method for Partial Differential Equations with Random Input Data. *SIAM Journal on Numerical Analysis*, **2008**, 46, 2411-2442 | 2.4 | 350 |
| 20 | Adaptive Weak Approximation of Diffusions with Jumps. *SIAM Journal on Numerical Analysis*, **2008**, 46, 1732-1768 | 2.4 | 21 |
| 19 | 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 | 5.7 | 55 |
| 18 | Static frame challenge problem: Summary. *Computer Methods in Applied Mechanics and Engineering*, **2008**, 197, 2572-2577 | 5.7 | 3 |
| 17 | Validation Challenge Workshop. *Computer Methods in Applied Mechanics and Engineering*, **2008**, 197, 2375-2380 | 5.7 | 33 |
| 16 | Formulation of the static frame problem. *Computer Methods in Applied Mechanics and Engineering*, **2008**, 197, 2496-2499 | 5.7 | 9 |

| | | | |
|---|---|---|---|
| 15 | Reliability of computational science. *Numerical Methods for Partial Differential Equations*, **2007**, 23, 753-784 | 1.5 | 37 |
| 14 | A Stochastic Collocation Method for Elliptic Partial Differential Equations with Random Input Data. *SIAM Journal on Numerical Analysis*, **2007**, 45, 1005-1034 | 2.4 | 740 |
| 13 | Convergence Rates for an Adaptive Dual Weighted Residual Finite Element Algorithm. *BIT Numerical Mathematics*, **2006**, 46, 367-407 | 1.7 | 8 |
| 12 | Adaptive Monte Carlo Algorithms for Stopped Diffusion. *Lecture Notes in Computational Science and Engineering*, **2005**, 59-88 | 0.3 | 8 |
| 11 | Theory and methodology for estimation and control of errors due to modeling, approximation, and uncertainty. *Computer Methods in Applied Mechanics and Engineering*, **2005**, 194, 195-204 | 5.7 | 42 |
| 10 | 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 | 5.7 | 241 |
| 9 | Worst case scenario analysis for elliptic problems with uncertainty. *Numerische Mathematik*, **2005**, 101, 185-219 | 2.2 | 23 |
| 8 | Convergence Rates for Adaptive Weak Approximation of Stochastic Differential Equations. *Stochastic Analysis and Applications*, **2005**, 23, 511-558 | 1.1 | 21 |
| 7 | Galerkin Finite Element Approximations of Stochastic Elliptic Partial Differential Equations. *SIAM Journal on Numerical Analysis*, **2004**, 42, 800-825 | 2.4 | 603 |
| 6 | Convergence rates for adaptive approximation of ordinary differential equations. *Numerische Mathematik*, **2003**, 96, 99-129 | 2.2 | 11 |
| 5 | A variational principle for adaptive approximation of ordinary differential equations. *Numerische Mathematik*, **2003**, 96, 131-152 | 2.2 | 7 |
| 4 | SOLVING STOCHASTIC PARTIAL DIFFERENTIAL EQUATIONS BASED ON THE EXPERIMENTAL DATA. *Mathematical Models and Methods in Applied Sciences*, **2003**, 13, 415-444 | 3.5 | 43 |
| 3 | Cost effective policies for alternative distributions of stochastic water pollution. *Journal of Environmental Management*, **2002**, 66, 145-57 | 7.9 | 24 |
| 2 | Adaptive weak approximation of stochastic differential equations. *Communications on Pure and Applied Mathematics*, **2001**, 54, 1169-1214 | 2.5 | 42 |
| 1 | Hyperbolic Differential Equations and Adaptive Numerics. *Universitext*, **2001**, 231-280 | 0.2 | 2 |