

# Chapter 11 Rare-Event Simulation Techniques: An Intro

Handbooks in Operations Research and Management Science  
13, 291-350

DOI: [10.1016/s0927-0507\(06\)13011-x](https://doi.org/10.1016/s0927-0507(06)13011-x)

Citation Report

#	ARTICLE	IF	CITATIONS
2	Monte Carlo methods for pricing financial options. <i>Sadhana - Academy Proceedings in Engineering Sciences</i> , 2005, 30, 347-385.	0.8	11
3	Asymptotics and fast simulation for tail probabilities of maximum of sums of few random variables. <i>ACM Transactions on Modeling and Computer Simulation</i> , 2007, 17, 7.	0.6	18
4	Minimum Cross-entropy Methods for Rare-event Simulation. <i>Simulation</i> , 2007, 83, 769-784.	1.1	6
5	Efficient Estimation of Loss Rates in Optical Packet Switched Networks with Wavelength Conversion. , 2007, , .		2
6	Ant-based approach for determining the change of measure in importance sampling. , 2007, , .		3
7	Fortieth anniversary special panel: Landmark papers. , 2007, , .		3
8	Estimating the probability of a rare event over a finite time horizon. , 2007, , .		6
9	Non-linear control variates for regenerative steady-state simulation. , 2007, , .		1
10	Efficient Simulation of Optical Ring Networks with Intermittent Transceiver Faults. Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS), Proceedings of the International Symposium on, 2007, , .	0.0	0
11	Fortieth anniversary special panel: Landmark papers. , 2007, , .		1
12	Fluid heuristics, Lyapunov bounds and efficient importance sampling for a heavy-tailed G/G/1 queue. <i>Queueing Systems</i> , 2007, 57, 99-113.	0.6	29
13	Efficient tail estimation for sums of correlated lognormals. , 2008, , .		7
14	Portfolio Credit Risk with Extremal Dependence: Asymptotic Analysis and Efficient Simulation. <i>Operations Research</i> , 2008, 56, 593-606.	1.2	87
15	Survivability quantification of communication services. , 2008, , .		16
16	Efficient rare-event simulation for the maximum of heavy-tailed random walks. <i>Annals of Applied Probability</i> , 2008, 18, .	0.6	77
18	Efficient importance sampling for binary contingency tables. <i>Annals of Applied Probability</i> , 2009, 19, .	0.6	25
19	The Cross-Entropy Method with Patching for Rare-Event Simulation of Large Markov Chains. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0
20	Estimating the Total Population Overflow as a Rare Event in a Tandem Network. , 2009, , .		2

#	ARTICLE	IF	CITATIONS
21	Importance sampling for Jackson networks. Queueing Systems, 2009, 62, 113-157.	0.6	36
22	Rare event simulation for a slotted time M/G/s model. Queueing Systems, 2009, 63, 33-57.	0.6	18
23	Importance sampling algorithms for first passage time probabilities in the infinite server queue. European Journal of Operational Research, 2009, 199, 176-186.	3.5	12
24	Network survivability modeling. Computer Networks, 2009, 53, 1215-1234.	3.2	140
25	Importance sampling simulations of phase-type queues. , 2009, , .		1
27	Asymptotic optimality of the cross-entropy method for Markov chain problems. Procedia Computer Science, 2010, 1, 1571-1578.	1.2	9
28	The cross-entropy method with patching for rare-event simulation of large Markov chains. European Journal of Operational Research, 2010, 207, 1380-1397.	3.5	13
29	Overhead reduction in a distributed path management system. Computer Networks, 2010, 54, 1019-1041.	3.2	12
31	Variance Reduction Techniques in Monte Carlo Methods. SSRN Electronic Journal, 0, , .	0.4	7
32	Asymptotic robustness of estimators in rare-event simulation. ACM Transactions on Modeling and Computer Simulation, 2010, 20, 1-41.	0.6	47
33	Rare event simulation techniques. , 2011, , .		10
34	A verified wireless safety critical hard real-time design. , 2011, , .		8
35	Efficient estimation of density and probability of large deviations of sum of IID random variables. , 2011, , .		2
36	An importance sampling method based on a one-step look-ahead density from a Markov chain. , 2011, , .		2
37	Analysis of a Splitting Estimator for Rare Event Probabilities in Jackson Networks. Stochastic Systems, 2011, 1, 306-339.	0.8	5
39	Approximate Zero-Variance Importance Sampling for Static Network Reliability Estimation. IEEE Transactions on Reliability, 2011, 60, 590-604.	3.5	45
40	Efficient simulation of tail probabilities of sums of $\hat{A}$ correlated lognormals. Annals of Operations Research, 2011, 189, 5-23.	2.6	39
41	Exact asymptotic for infinite-server queues. , 2011, , .		0

#	ARTICLE	IF	CITATIONS
42	On Lyapunov Inequalities and Subolutions for Efficient Importance Sampling. ACM Transactions on Modeling and Computer Simulation, 2012, 22, 1-27.	0.6	13
43	C-NORTA: A Rejection Procedure for Sampling from the Tail of Bivariate NORTA Distributions. INFORMS Journal on Computing, 2012, 24, 295-310.	1.0	1
44	Probabilistic bounded relative error for rare event simulation learning techniques. , 2012, , .		2
45	Goal-Directed Grid-Enabled Computing for Legacy Simulations. , 2012, , .		11
46	On error rates in rare event simulation with heavy tails. , 2012, , .		6
47	State-dependent importance sampling for rare-event simulation: An overview and recent advances. Surveys in Operations Research and Management Science, 2012, 17, 38-59.	3.1	36
48	A simple recursive importance and stratified sampling scheme for stochastic network reliability estimation. Simulation Modelling Practice and Theory, 2012, 29, 137-148.	2.2	2
49	Probabilistic Bounded Relative Error Property for Learning Rare Event Simulation Techniques. SSRN Electronic Journal, 0, , .	0.4	0
50	Applying a splitting technique to estimate electrical grid reliability. , 2013, , .		6
51	A combined importance splitting and sampling algorithm for rare event estimation. , 2013, , .		1
52	SimGine: A simulation engine for stochastic discrete-event systems based on SDES description. Simulation, 2013, 89, 539-555.	1.1	1
53	Optimal Sampling of Overflow Paths in Jackson Networks. Mathematics of Operations Research, 2013, 38, 698-719.	0.8	6
55	Estimation of insurance premiums for coverage against natural disaster risk: an application of Bayesian Inference. Natural Hazards and Earth System Sciences, 2013, 13, 737-754.	1.5	21
56	An adaptive zero-variance importance sampling approximation for static network dependability evaluation. Computers and Operations Research, 2014, 45, 51-59.	2.4	5
57	Discovering rare behaviours in stochastic differential equations using decision procedures: applications to a minimal cell cycle model. International Journal of Bioinformatics Research and Applications, 2014, 10, 540.	0.1	1
58	Rare-Event Simulation for Many-Server Queues. Mathematics of Operations Research, 2014, 39, 1142-1178.	0.8	8
59	State-independent Importance Sampling for Random Walks with Regularly Varying Increments. Stochastic Systems, 2014, 4, 321-374.	0.8	3
60	Accelerated Evaluation of Automated Vehicles in Lane Change Scenarios. , 2015, , .		9

#	ARTICLE	IF	CITATIONS
62	Error Rates and Improved Algorithms for Rare Event Simulation with Heavy Weibull Tails. Methodology and Computing in Applied Probability, 2015, 17, 441-461.	0.7	11
63	Simulation Modeling and Analysis. , 2016, , 801-886.		2
64	Rare event simulation for Markov random fields with application to grain growth in crystals. , 2016, , .		1
65	Tuning of adaptive interacting particle system for rare event probability estimation. Simulation Modelling Practice and Theory, 2016, 66, 36-49.	2.2	3
66	Rapid Assessment of Design Sensitivity to Process Excursions via Scaled Sigma Sampling. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2016, 35, 957-970.	1.9	1
67	Dynamic Portfolio Credit Risk and Large Deviations. New Economic Windows, 2017, , 41-58.	1.0	1
68	Efficient Algorithms for Analyzing Cascading Failures in a Markovian Dependability Model. IEEE Transactions on Reliability, 2017, 66, 258-280.	3.5	10
69	Accelerated Evaluation of Automated Vehicles Safety in Lane-Change Scenarios Based on Importance Sampling Techniques. IEEE Transactions on Intelligent Transportation Systems, 2017, 18, 595-607.	4.7	237
70	History of improving statistical efficiency. , 2017, , .		2
71	Estimating Large Delay Probabilities in Two Correlated Queues. ACM Transactions on Modeling and Computer Simulation, 2018, 28, 1-19.	0.6	1
72	Uncertainty Quantification of Stochastic Simulation for Black-box Computer Experiments. Methodology and Computing in Applied Probability, 2018, 20, 1155-1172.	0.7	13
73	Accelerated Evaluation of Automated Vehicles in Car-Following Maneuvers. IEEE Transactions on Intelligent Transportation Systems, 2018, 19, 733-744.	4.7	124
74	Accelerated testing for automated vehicles safety evaluation in cut-in scenarios based on importance sampling, genetic algorithm and simulation applications. Journal of Intelligent and Connected Vehicles, 2018, 1, 28-38.	3.6	21
75	RARE-EVENT SIMULATION WITHOUT STRUCTURAL INFORMATION: A LEARNING-BASED APPROACH. , 2018, , .		4
76	DESIGNING IMPORTANCE SAMPLERS TO SIMULATE MACHINE LEARNING PREDICTORS VIA OPTIMIZATION. , 2018, , .		3
77	An efficient Simulation Method for the Reliability of TT&C Mission. , 2018, , .		0
78	Exponentially Twisted Sampling for Centrality Analysis in Attributed Networks. , 2018, , .		0
79	Linear Stochastic Fluid Networks: Rare-Event Simulation and Markov Modulation. Methodology and Computing in Applied Probability, 2019, 21, 125-153.	0.7	3

#	ARTICLE	IF	CITATIONS
80	Extreme Event Quantification in Dynamical Systems with Random Components. SIAM-ASA Journal on Uncertainty Quantification, 2019, 7, 1029-1059.	1.1	21
81	Sharp asymptotics for large portfolio losses under extreme risks. European Journal of Operational Research, 2019, 276, 710-722.	3.5	18
82	Multilevel Monte Carlo method for ergodic SDEs without contractivity. Journal of Mathematical Analysis and Applications, 2019, 476, 149-176.	0.5	11
83	Variational approach to rare event simulation using least-squares regression. Chaos, 2019, 29, 063107.	1.0	9
84	A rare-event estimation of heterogeneous degradation process. , 2019, , .		1
85	Exponentially Twisted Sampling for Centrality Analysis and Community Detection in Attributed Networks. IEEE Transactions on Network Science and Engineering, 2019, 6, 684-697.	4.1	7
86	Excessive backlog probabilities of two parallel queues. Annals of Operations Research, 2020, 293, 141-174.	2.6	1
87	Evolutionary reinforcement learning of dynamical large deviations. Journal of Chemical Physics, 2020, 153, 044113.	1.2	18
88	Efficient Large Deviation Estimation Based on Importance Sampling. Journal of Statistical Physics, 2020, 181, 551-586.	0.5	7
89	Low-Overhead Evaluation of Multiuser Detection Performance for Physical-Layer Multiple Access Systems. IEEE Access, 2020, 8, 20537-20545.	2.6	3
90	Solving Poisson's equation for birth-death chains: Structure, instability, and accurate approximation. Performance Evaluation, 2021, 145, 102163.	0.9	1
91	Model calibration via distributionally robust optimization: On the NASA Langley Uncertainty Quantification Challenge. Mechanical Systems and Signal Processing, 2022, 164, 108211.	4.4	2
93	The importance sampling technique for understanding rare events in Erdős-Rényi random graphs. Electronic Journal of Probability, 2015, 20, .	0.5	2
94	State-dependent importance sampling for regularly varying random walks. Advances in Applied Probability, 2008, 40, 1104-1128.	0.4	39
95	Efficient Simulation for the Maximum of Infinite Horizon Discrete-Time Gaussian Processes. Journal of Applied Probability, 2011, 48, 467-489.	0.4	11
96	Variance reduction techniques for pricing American options using function approximations. Journal of Computational Finance, 2009, 12, 79-102.	0.3	16
97	Application of Entropy-weight Fuzzy Comprehensive Evaluation Method in Post Safety Competency Appraisal of Special Operation Staff in Coal Enterprises. Journal of Software, 2012, 7, .	0.6	3
98	State-independent Importance Sampling for Estimating Large Deviation Probabilities in Heavy-tailed Random Walks. , 2012, , .		2

#	ARTICLE	IF	CITATIONS
99	On the Error of Naive Rare-Event Monte Carlo Estimator. , 2020, , .		0
100	An Architecture for Low Overhead Grid, HPC, and Cloud-Based Simulation as a Service. Simulation Foundations, Methods and Applications, 2020, , 321-345.	0.8	0
102	Scenario-Based Test Automation for Highly Automated Vehicles: A Review and Paving the Way for Systematic Safety Assurance. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 14088-14103.	4.7	25
103	Rare-event Simulation for Neural Network and Random Forest Predictors. ACM Transactions on Modeling and Computer Simulation, 2022, 32, 1-33.	0.6	9
104	Rare-event analysis and simulation of queues with time-varying rates. Queueing Systems, 0, , 1.	0.6	0
107	A new technique for rare-event simulation based on partition of the region. Turkish Journal of Electrical Engineering and Computer Sciences, 0, , .	0.9	0
108	A Flexible Approach to Modeling Unpredictable Events in MDPs. , 0, 23, 260-268.		4
109	Rare-Event Simulation Without Variance Reduction: An Extreme Value Theory Approach. , 2022, , .		0
110	Combining Retrospective Approximation with Importance Sampling for Optimising Conditional Value at Risk. , 2022, , .		0
111	Importance Sampling for Rare-Event Gradient Estimation. , 2022, , .		0
112	Efficient Algorithms for Calculating Risk Measures and Risk Contributions in Copula Credit Models. SSRN Electronic Journal, 0, , .	0.4	0
113	Chance-Constrained Programming: Rare Events. , 2023, , 1-6.		0
118	Novel method for the Computation of In-Orbit Collision Probability by Multilevel Splitting and Surrogate Modelling. , 2024, , .		0