

# Curriculum Vitae

## Bruno Tuffin

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[http://www.irisa.fr/dionysos/pages\\_perso/tuffin/Tuffin\\_en.htm](http://www.irisa.fr/dionysos/pages_perso/tuffin/Tuffin_en.htm)

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## Personal data

Date of birth : August, 7 1971  
Place of birth : Lorient (Morbihan, France)  
Civil Status : Married, 2 children  
Address : INRIA Rennes, Campus de Beaulieu, 35042 Rennes Cedex  
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## Education

- Oct. 2013-... : DR2 INRIA at Rennes
- Jan. 2001-Sept. 2013 : CR1 INRIA at Rennes
- 2006 : Habilitation in Computer Science, University of Rennes 1
- Oct. 1998-Dec. 2000 : CR2 INRIA at Rennes
- Mai 1999- Déc. 1999 : 8 months scientific stay at Duke University, NC, USA.
- Sept. 1997-August 1998 : Temporary position (A.T.E.R.) at Univ. Rennes 1
- 1997 : PhD in Mathematics, University of Rennes 1  
*Accelerated simulation by Monte Carlo and Quasi-Monte Carlo methods : theory and applications*  
Advisor : G. Rubino.
- 1997 : CAPES in Mathématiques (teaching degree).
- Sept. 1994-August 1997 : Moniteur (partial teaching position) at the University of Rennes 1.
- 1994 : Master (DEA) in Mathematics, section probability, University of Brest  
With distinction "good". Ranked 1st in the probability section.  
Dissertation title : *Study of low discrepancy sequences and of quasi-Monte Carlo methods.*  
Advisor : G. Rubino.
- 1993 : Maîtrise (first year of master) in Mathematics, Brest,  
with distinction "very good". Ranked 1st.
- 1992 : Bachelor in Mathematics, Brest,  
with distinction "very good". Ranked 1st.
- 1991 : DEUG A (undergraduate level) A, Brest,  
with distinction "very good". Ranked 1st.

- 1989 :                                   Baccalaureat (High-School degree),  
Colbert High School, Lorient. "quite good" distinction.
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## Research topics

- Internet pricing models.
  - Measurements.
  - Performance and reliability analysis of communication networks.
  - Monte Carlo and quasi-Monte Carlo simulation methods, with applications.
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## Publications

### A. PhD thesis :

1. B. Tuffin, Accelerated simulation by Monte Carlo and Quasi-Monte Carlo methods : theory and applications. PhD thesis, University of Rennes 1. October 1997.
2. B. Tuffin. Mathematical Modeling for the conception, the quantitative analysis and QoS control of systems. Habilitation à diriger les recherches, Université de Rennes 1. April 2006.

### B. Books :

1. B. Tuffin. *La simulation Monte Carlo*. Editions Hermès, February 2010.
2. P. Maillé and B. Tuffin. *Telecommunication Network Economics : From Theory to Applications*. Cambridge University Press, 2014.

### C. Edited books and special issues of journals :

1. B. Stiller, P. Reichl and B. Tuffin (eds). Performability has its price. Proceedings of the fifth International Workshop on Advanced Internet Charging and QoS technologies (ICQT'06), St Malo, France. Lecture Notes in Computer Science N.4033, Springer Verlag, 2006.
2. T. Chahed and B. Tuffin (eds). International Conference on Network Control and Optimization (NET-COOP'07), Avignon, France. Lecture Notes in Computer Science N.4465, Springer Verlag, 2007.
3. P.W. Glynn and B. Tuffin (eds). Performance Evaluation Methodologies and Tools : Selected papers from ValueTools 2007. *Performance Evaluation*, Volume 65, Issues 11+12, November 2008.
4. P. Reichl, B. Stiller and B. Tuffin (eds). Network Economics for Next Generation Networks. Proceedings of the sixth International Workshop on Advanced Internet Charging and QoS technologies (ICQT'09), Aachen, Germany. Lecture Notes in Computer Science N.5539, Springer Verlag, 2009.
5. G. Rubino and B. Tuffin (eds). *Rare Event Simulation using Monte Carlo Methods*. John Wiley & Sons, 2009.
6. G. Rubino and B. Tuffin (eds). Special issue of ACM Transactions on Modeling and Computer Simulation on Rare Event Simulation. Articles eventually included in regular issues (due to a limited selected number).
7. T. Anh Trinh, P. Reichl, B. Stiller and B. Tuffin (eds). Special issue of Telecommunication Systems Journal on Socio-Economic Issues of Next Generation Networks, in press.

8. S. Distefano, A. Puliafito, M. Scarpa and B. Tuffin (eds). Performance Evaluation Methodologies and Tools : Selected papers from ValueTools 2016. *Performance Evaluation*, 2017, to appear.

#### D. Papers in scientific journals

1. B. Tuffin, On the Use of Low Discrepancy Sequences in Monte Carlo Methods. *Monte Carlo Methods and Applications*, Vol.2, Num.4, pages 295-320, 1996.  
See also the note "Comments on "On the use of low discrepancy sequences in Monte Carlo methods". *Monte Carlo Methods and Applications*. Vol.4, 1998.
2. B. Tuffin, Variance Reductions applied to Product-Form Multi-Class Queuing Networks. *ACM Transactions on Modeling and Computer Simulation*, Vol.7, Num.4, pages 478-500, 1997.
3. B. Tuffin, Variance Reduction Order Using Good Lattice Points in Monte Carlo Methods. *Computing*, Vol. 61, Num. 4, pages 371-378, 1998.
4. B. Sericola and B. Tuffin, A Fluid Queue Driven by a Markovian Queue. *Queuing Systems : Theory and Applications*, Vol.31, pages 253-264, 1999.
5. B. Tuffin, Bounded Normal Approximation in Highly Reliable Markovian Systems. *Journal of Applied Probability*, Vol. 36, Num.4, 1999.
6. B. Tuffin et L.M. Le Ny. Parallélisation d'une combinaison des méthodes de Monte Carlo et quasi-Monte Carlo et application aux réseaux de files d'attente. *RAIRO : Recherche opérationnelle*, Vol. 34, pages 85-98, 2000.
7. B. Tuffin, D.S. Chen and K.S. Trivedi, Comparison of Hybrid Systems and Fluid Stochastic Petri Nets. *Discrete Event Dynamic Systems*, Vol. 11, Num. 1, pages 77-96, 2001.
8. B. Tuffin. Revisited Progressive Second Price Auctions for Charging Telecommunication Networks. *Telecommunication Systems*, Vol. 20, Num. 3, pages 255-263, 2002.
9. H. Cancela, G. Rubino and B. Tuffin, MTTFF estimation by Monte Carlo methods using Markov models. *Monte Carlo Methods and Applications*, Vol.8, Num.4, pages 312-341, 2002.
10. B. Tuffin. Charging the Internet without bandwidth reservation : an overview and bibliography of mathematical approaches. *Journal of Information Science and Engineering*, Vol. 19, pages 7-5-786, 2003.
11. P. Maillé and B. Tuffin. The Progressive Second Price Mechanism in a Stochastic Environment. *Netnomics*, Vol.5, pages 119-147, 2003.
12. D. Ros and B. Tuffin. Mathematical Model of Paris Metro Pricing Scheme for Charging Telecommunication Networks. *Computer Networks*, Vol. 46, pages 73-85, 2004.
13. C. Lécot and B. Tuffin. Comparison of Quasi-Monte Carlo-Based Methods for the Simulation of Markov Chains. *Monte Carlo Methods and Applications*, Vol.10, Num.3-4, pages 377-384, 2004.
14. B. Tuffin. Randomization of Quasi-Monte Carlo Methods for Error Estimation : Survey and Normal Approximation. *Monte Carlo Methods and Applications*, Vol.10, Num.3-4, pages 617-628, 2004.
15. Y. Hayel and B. Tuffin. A Mathematical Analysis of the Cumulus Pricing Scheme. *Computer Networks*, Vol.47, pages 907-921, 2005.
16. E. Altman, D. Barman, R. El Azouzi, D. Ros and B. Tuffin. Pricing Differentiated Services : A Game-Theoretic Approach. *Computer Networks*, Vol.50, Num. 7, pages 982-1002, 2006.

17. E. Altman, E. El-Azouzi, D. Ros and B. Tuffin. Loss Policies for Competing TCP/IP Connections. *Computer Networks*, Vol.50, Num. 11, pages 1799-1815, 2006.
18. Y. Hayel and B. Tuffin. An Optimal Congestion and Cost-Sharing Pricing Scheme for Multiclass Services. *Mathematical Methods of Operational Research*, Vol.63, Num.3, 2006.
19. G. Okten, B. Tuffin and V. Burago. A central limit theorem and improved error bounds for a hybrid-Monte Carlo sequence with applications in computational finance. *Journal of Complexity*, Vol. 22, pages 435-458, 2006.
20. P. Maillé and B. Tuffin. Pricing the Internet with Multi-Bid Auctions. *IEEE/ACM Transactions on Networking*, Vol. 14, Num. 5, pages 992-1104, 2006.
21. Y. Hayel, M. Ouarrarou and B. Tuffin. Optimal Measurement-based Pricing for an M/M/1 Queue. *Networks and Spatial Economics*, Vol. 7, Num. 2, pages 177-195, 2007.
22. P. L'Ecuyer, V. Demers and B. Tuffin. Rare Events, Splitting, and Quasi-Monte Carlo. *ACM Transactions on Modeling and Computer Simulation*, Vol. 17, Num. 2, Article 9, 2007.
23. P. L'Ecuyer, C. Lécot and B. Tuffin. A Randomized Quasi-Monte Carlo Method for Markov Chains. *Operations Research*, Vol. 56, Num. 4, Pages 958-975, July-August 2008.
24. H. Cancela, P. Rodriguez and B. Tuffin. Availability Based Pricing and Topology Upgrade of Communication Networks. *Annals of Operations Research*, Vol. 157, Num. 1, Pages 61-71, 2008.
25. P. Maillé, B. Tuffin, Y. Xing and R. Chandramouli. User Strategy Learning when Pricing a RED Buffer. *Elsevier : Simulation Modelling, Practice and Theory*, Vol. 17, Num. 3, Pages 548-557, March 2009.
26. P. L'Ecuyer, J. Blanchet, B. Tuffin, P.W. Glynn. Asymptotic Robustness of Estimators in Rare-Event Simulation. *ACM Transactions on Modeling and Computer Simulation*, Vol 20, Num. 1 Article 6 (41 pages), 2010.
27. P. L'Ecuyer and B. Tuffin. Approximating Zero-Variance Importance Sampling in a Reliability Setting. *Annals of Operations Research*. Volume 189, Issue 1, pp 277-297, September 2011.
28. H. Le Cadre, M. Bouhtou and B. Tuffin. Modeling Consumers' Preference to Price Bundle Offers in Telecommunication industry Game when Competition among Operators. *Netnomics*, Vol. 10, Num. 9, pages 171-208, 2009.
29. B. Tuffin, H. Le Cadre, M. Bouthou. Optimal pricing strategy with compensation when QoS is not satisfied. *Annals of Telecommunication*. Vol. 65, No 3-4, March-April 2010.
30. P. Maillé and B. Tuffin. Price War in Heterogeneous Wireless Networks. *Computer Networks*. Vol. 54, Num. 13, Pages 2281-2292, September 2010.
31. Hai Tran Hoang and B. Tuffin. Inter-domain pricing : Challenges and possible approaches. *International Journal of Network Management*, Vol.21, Num. 3, pages 223-246, 2011.
32. P. Maille, B. Tuffin and J.M. Vigne. Technological Investment Games Among Wireless Telecommunications Service Providers. *International Journal of Network Management*, Vol. 21, pages 65-82, 2011.
33. P. L'Ecuyer, D. Munger and B. Tuffin. On the Distribution of Integration Error by Randomly-Shifted Lattice Rules. *Electronic Journal of Statistics*, Vol. 4, pages 950-993, 2010.
34. P. L'Ecuyer, G. Rubino, S. Saggadi and B. Tuffin. Approximation of Zero-Variance Importance Sampling for the Evaluation of Static Reliability Models. *IEEE Transactions on Reliability*, Vol. 60, Num. 3, pages 590-604, September 2011.

35. Hai Tran Hoang and B. Tuffin. Combinatorial double-sided auctions for network bandwidth allocation : A budget-balanced and decentralized approach. *Annals of Telecommunications*, Volume 67, Issue 5-6, pp 227-240, June 2012.
36. P. Reichl, R. Schatz and B. Tuffin. Logarithmic Laws in Service Quality Perception : Where Microeconomics Meets Psychophysics and Quality of Experience. *Telecommunication Systems*, to appear, 2011.
37. P. Maillé and B. Tuffin. Competition Among Providers in Loss Networks. *Annals of Operations Research*, Volume 199, Issue 1 (2012), Pages 3-22.
38. D. Munger, P. L'Ecuyer, F. Bastin, C. Cirillo and B. Tuffin. Estimation of the Mixed Logit Likelihood Function by Randomized Quasi-Monte Carlo. *Transportation Research Part B*. Vol. 46, Num. 2, pp. 305-320, 2012.
39. Z.I. Botev, P. L'Ecuyer, G. Rubino, R. Simard and B. Tuffin. Static Network Reliability Estimation Via Generalized Splitting. *INFORMS Journal on Computing*, Volume 25 Issue 1, Pages 56-71, 2013.
40. Z.I. Botev, P. L'Ecuyer and B. Tuffin. Markov chain importance sampling with applications to rare event probability analysis. *Statistics and Computing*. Volume 23, Issue 2, pp 271-285, March 2013.
41. P. Maillé, E. Markakis, M. Naldi, G. Stamoulis and B. Tuffin. An Overview of Research on Sponsored Search Auctions. *Electronic Commerce Research Journal*. Vol. 12, Num. 3, pages 265-300, 2012.
42. O. Marce, H.-H. Tran and B. Tuffin. Double-sided auctions applied to vertical handover for mobility management in wireless networks. *Journal of Network and Systems Management*, Pages 1-24, March 2013.
43. V. Caron, A. Guyader, M. Munoz Zuniga et B. Tuffin. Some Recent Results in Rare Event Estimation. *ESAIM Proc.*, Vol. 44, p. 239-259, January 2014.
44. P. Coucheney, P. Maille and B. Tuffin. Impact of Reputation-Sensitive Users and Competition Between ISPs on the Net Neutrality Debate. *IEEE Transactions on Network and Service Management*, Vol. 10, Num. 4, Dec. 2014.
45. B. Tuffin, S. Saggadi and P. L'Ecuyer. An Adaptive Zero-Variance Importance Sampling Approximation for Static Network Dependability Evaluation. *Computers and Operations Research*, Vol. 45, Pages 51-59, 2014.
46. H. Cancela, M. El Khadiri, G. Rubino and B. Tuffin. Balanced and Approximate Zero-Variance Recursive Estimators for the Network Reliability Problem. *ACM Transactions on Modeling and Computer Simulation*. Vol. 25. Issue 1, Article 5, Dec. 2014.
47. P. Coucheney, G. D'Acquisto, P. Maillé M. Naldi and B. Tuffin. Influence of search neutrality on the economics of advertisement-financed content. *ACM Transactions on Internet Technology*. Volume 14, Issue 2-3, Article 10, October 2014.
48. P. Coucheney, P. Maille and B. Tuffin. Network Neutrality Debate and ISP Inter-Relations : Traffic Exchange, Revenue Sharing, and Disconnection Threat. *NETNOMICS : Economic Research and Electronic Networking*. Volume 15, Issue 3, pp 155-182, November 2014.
49. Z. I. Botev, P. L'Ecuyer, R. Simard and B. Tuffin. Static Network Reliability Estimation under the Marshall-Olkin Copulas. *ACM Transactions on Modeling and Computer Simulation*, Volume 26 Issue 2, Article No. 14, January 2016.
50. P. Maillé, G. Simon and B. Tuffin. Toward a Net Neutrality Debate that Conforms to the 2010s. *IEEE Communications Magazine*. Vol. 54, Num.3, Pages 94-99, March 2016.

51. P. L'Ecuyer, D. Munger, C. Lecot and B. Tuffin. Sorting methods and convergence rates for Array-RQMC : some empirical comparisons. *Mathematics and Computers in Simulation*. 143C, Pages 191-201, 2018.
52. P. Maillé and B. Tuffin. Preventing Competition Using Side Payments : When Non-Neutrality Creates Barriers to Entry. *Netnomics*. Vol. 18, Issue 1, pp 3-22, 2017.
53. Pierre L'Ecuyer, Patrick Maille, Nicolas Stier-Moses, and Bruno Tuffin. Revenue-Maximizing Rankings for Online Platforms with Quality-Sensitive Consumers. *Operations Research*. To appear.
54. E. Gourdin, P. Maille, G. Simon and B. Tuffin. The Economics of CDNs and Their Impact on Service Fairness. *IEEE Transactions on Network and Service Management*. Vol. 14, Num. 1, Pages 22-33, 2017.
55. P. Maille and B. Tuffin. Auctions for online ad space among advertisers sensitive to both views and clicks. *Electronic Commerce Research*. To appear.
56. P. L'Ecuyer, P. Maille, N. Stier-Moses, and B. Tuffin. Non-Neutrality of Search Engines and its Impact on Innovation. *Internet Technology Letters*. To appear.

#### E. Book chapters

1. G. Rubino, B. Tuffin. Simulations et méthodes de Monte Carlo. In : *Techniques de l'Ingénieur*, No. AF600, 2007.
2. G. Rubino and B. Tuffin. Introduction to Rare Event Simulation. In *Rare Event Analysis Using Monte Carlo Methods*, G. Rubino and B. Tuffin Eds, John Wiley& Sons, pages 1-14, 2009.
3. P. L'Ecuyer, M. Mandjes, and B. Tuffin. Importance Sampling and Rare Event Simulation. In *Rare Event Analysis Using Monte Carlo Methods*, G. Rubino and B. Tuffin Eds, John Wiley& Sons, pages 17-38, 2009.
4. P. L'Ecuyer, F. LeGland, P. Lezard and B. Tuffin. Splitting Techniques in Rare Event Simulation. In *Rare Event Analysis Using Monte Carlo Methods*, G. Rubino and B. Tuffin Eds, John Wiley& Sons, pages 39-62, 2009.
5. P.W. Glynn, G. Rubino and B. Tuffin. Robustness properties and confidence interval accuracy issues. In *Rare Event Analysis Using Monte Carlo Methods*, G. Rubino and B. Tuffin Eds, John Wiley& Sons, pages 63-84, 2009.
6. G. Rubino and B. Tuffin. Markovian Models for Dependability Analysis. In *Rare Event Analysis Using Monte Carlo Methods*, G. Rubino and B. Tuffin Eds, John Wiley& Sons, pages 125-144, 2009.
7. H. Cancela, P. L'Ecuyer, M. Lee, G. Rubino and B. Tuffin. Analysis and Improvements of Path-Based Methods for Monte Carlo Reliability Evaluation of Static Models. Chapter 3 in *Simulation Methods for Reliability and Availability of Complex Systems*, J. Faulin, A. A. Juan, S. Martorell, and E. Ramirez-Marquez Eds., Springer-Verlag, 2010, pages 65-84.
8. P. Maille, P. Reichl and B. Tuffin. Of Threats and Costs : A Game-Theoretic Approach to Security Risk Management. In *Performance Models and Risk Management in Communication Systems*, N. Gulpinar, P. Harrison and B. Rustem (Eds.), Springer-Verlag, 2011, Pages 33-54.
9. B. Tuffin. Economics and Governance of Future Networks ; Introduction. In *Telecommunications Economics - Selected Results of the COST Action IS605 Econtel*, A. Antoniadis and B. Stiller (Eds.), Lecture Notes in Computer Science, Springer-Verlag, Pages 89-90, 2012.

10. P. Maille, P. Reichl and B. Tuffin. Internet Governance and Economics of Network Neutrality. In *Telecommunications Economics - Selected Results of the COST Action IS605 Econtel*, A. Antoniadias and B. Stiller (Eds.), Lecture Notes in Computer Science, Springer-Verlag, pages 108-116, 2012.
11. P. Maille, P. Reichl and B. Tuffin. Economics of Quality of Experience. In *Telecommunications Economics - Selected Results of the COST Action IS605 Econtel*, A. Antoniadias and B. Stiller (Eds.), Lecture Notes in Computer Science, Springer-Verlag, pages 158-166, 2012.
12. P. Maille, P. Reichl and B. Tuffin. Competition among Telecommunication Providers. In *Telecommunications Economics - Selected Results of the COST Action IS605 Econtel*, A. Antoniadias and B. Stiller (Eds.), Lecture Notes in Computer Science, Springer-Verlag, pages 179-187, 2012.

#### F. Papers in referred conference proceedings

1. B. Tuffin, Variance Reduction Technique for a Cellular System with Dynamic Resource Sharing. In *Proceedings of the 10th European Simulation Multiconference*, p 467-471, Budapest, Hongrie, Juin 1996.
2. B. Tuffin, A new Permutation Choice in Halton Sequences and an Application to the Analysis of Product-Form Multi-Class Queuing Networks. *Second International Conference on Monte Carlo and quasi-Monte Carlo Methods in Scientific Computing, Salzburg, Austria, July 1996*. Sélectionnéto be published in a Lecture Notes in Statistics :  
B. Tuffin, A new Permutation Choice in Halton Sequences. Dans *Monte Carlo and Quasi-Monte Carlo 1996*, volume 127, Lecture Notes in Statistics, Springer Verlag, New-York, 1997.
3. B. Tuffin and K.S. Trivedi. Implementation of Importance Splitting techniques in Stochastic Petri Net Package. In *Haverkort, B.R., and Bohnenkamp, H.C. and Smith, C.U. (eds), Computer performance evaluation : Modelling tools and techniques ; 11th International Conference ; TOOLS 2000*, Lecture Notes in Computer Science, volume 1786, Springer Verlag, pages 216-229, 2000.
4. C. Hirel, B. Tuffin and K.S. Trivedi. SPNP Version 6.0. In *Haverkort, B.R., and Bohnenkamp, H.C. and Smith, C.U. (eds), Computer performance evaluation : Modelling tools and techniques ; 11th International Conference ; TOOLS 2000*, Lecture Notes in Computer Science, volume 1786, Springer Verlag, pages 354-357, 2000.
5. B. Tuffin. A randomized Quasi-Monte carlo method for the simulation of product-form loss networks. In *Proceedings of the 9th International Conference on Telecommunication Systems*, p 468-478, Dallas, TX, USA, Mars 2001.
6. B. Tuffin and K.S. Trivedi. Importance Sampling for the Simulation of Stochastic Petri nets and Fluid Stochastic Petri nets. In *Proceedings of High Performance Computing (HPC)*, pages 228-235, Seattle, WA, USA, Avril 2001.
7. H. Cancela, G. Rubino and B. Tuffin. MTTF estimation using importance sampling on Markov models. In *Proceedings of the 5th International Conference on Industrial Logistics*, Okinawa, Japan, 2001.
8. B. Tuffin and L.M. Le Ny. Modeling and analysis of threshold queues with hysteresis using stochastic Petri nets : the monoclasse case. In *Proceedings of Petri Nets and Performance Models, PNPM'01*, pages 175-184, IEEE CS Press, Aachen, Germany, 2001.
9. L.M. Le Ny and B. Tuffin. A simple analysis of heterogeneous multi-server threshold queues with hysteresis. In *Proceedings of the Applied Telecommunication Symposium*, San Diego, USA, April 2002.

10. L.M. Le Ny and B. Tuffin. Modeling and analysis of multi-class threshold-based queues with hysteresis using Stochastic Petri Nets. *In Proceedings the International Conference on Applications and Theory of Petri Nets*. Lecture Notes in Computer Science, Springer Verlag, 2002.
11. C. Lécot and B. Tuffin. Quasi-Monte Carlo Methods for Estimating Transient Measures of Discrete Time Markov Chains. *In Fifth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing*, Springer, pages 329-344, 2002.
12. P. Maillé and B. Tuffin. A Progressive Second Price Mechanism with a Sanction Bid from Excluded Players. *In Third International Workshop on Internet Charging and QoS Technology, ICQT'03*, Lecture Notes in Computer Science, 2003.
13. Y. Hayel, D. Ros and B. Tuffin. Less-than-Best-Effort Services : Pricing and Scheduling. *In Proceedings of IEEE Infocom 2004*, Hong-Kong, 2004.
14. P. Maillé and B. Tuffin. Multi-Bid Auctions for Bandwidth Allocation in Communication Networks. *In Proceedings of IEEE Infocom 2004*, Hong-Kong, 2004.
15. E. Altman, E. El-Azouzi, D. Ros and B. Tuffin. Loss Policies for Competing TCP/IP Connections. *In Proceedings of Networking 2004*, Lecture Notes in Computer Science, Springer, 2004.
16. E. Altman, D. Barman, E. El-Azouzi, D. Ros and B. Tuffin. Pricing Differentiated Services : A Game-Theoretic Approach. *In Proceedings of Networking 2004*, Lecture Notes in Computer Science, Springer, 2004.
17. A. Delanda, P. Maillé and B. Tuffin. Reserve Price in Progressive Second Price Auctions. *Proceedings of the Ninth IEEE Symposium on Computers and Communications*, Alexandrie, June 2004.
18. B. Tuffin, P. Rodriguez and H. Cancela. End-To-End Reliability-Dependent Pricing of Network Services. *In the Proceedings of the 12th Latin-Ibero-American Conference on Operations Research (CLAIO'04)*, La Havana, Cuba, 2004.
19. B. Tuffin. On Numerical Problems in Simulations of Highly Reliable Markovian Systems. *In the proceedings of the 1st International Conference on Quantitative Evaluation of SysTems (QEST)*, University of Twente, Enschede, the Netherlands, IEEE CS Press, September 2004.
20. P. Maillé and B. Tuffin. Multi-bid versus Progressive Second Price Auctions in a Stochastic Environment. *In Fourth International Workshop on Internet Charging and QoS Technology, ICQT'04*, Lecture Notes in Computer Science, 2004.
21. P. L'Ecuyer, C. Lécot, B. Tuffin. Quasi-Monte Carlo simulation of Markov chains with randomized copies of a two-dimensional highly-uniform point set. *Sixth International Conference on Monte Carlo and quasi-Monte Carlo Methods*, Juan-les-Pins, France June 2004, Springer-Verlag, 2005.
22. H. Cancela, G. Rubino and B. Tuffin. Bounded Relative Efficiency in Rare Event Simulation. *In Proceedings of SAINT 2005 workshops*, IEEE CS Press, Trento, January 2005.
23. Y. Hayel, P. Maillé and B. Tuffin. Modelling and Analysis of Internet Pricing : Introduction and Challenges. *In Proceedings of the International Symposium on Applied Stochastic Models and Data Analysis (ASMDA)*, Brest, May 2005.
24. Y. Hayel and B. Tuffin. Pricing for Heterogeneous Services at a Discriminatory Processor Sharing Queue *In Proceedings of Networking 2005*, Lecture Notes in Computer Science, Springer, May 2005.
25. P. Maillé and B. Tuffin. An Auction-Based Pricing Scheme for Bandwidth Sharing with History-Dependent Utility Functions. *In Proceedings of the First International Workshop on Incentive Based Computing (IBC'05)*, IEEE CS Press, Compiègne, France, September 2005.

26. V. Demers, P. L'Ecuyer and B. Tuffin. A Combination of Randomized Quasi-Monte Carlo with Splitting for Rare-Event Simulation. *In proceedings of the 2005 European Simulation and Modelling Conference (ESM'2005)*, Porto, Portugal, October 2005.
27. H. Cancela, G. Rubino and B. Tuffin. New Measures of Robustness in Rare Event Simulation. *In Proceedings of the 2005 Winter Simulation Conference*, Orlando, FL, December 2005.
28. E. Altman, D. Barman, B. Tuffin and M. Vojnovic. Parallel TCP Sockets : Simple Model, Throughput and Validation. *In Proceedings of IEEE Infocom 2006*, Barcelona, Spain, 2006.
29. P. Maillé and B. Tuffin. How Many Parallel TCP Sessions to Open : a Pricing Perspective. *In Fifth International Workshop on Internet Charging and QoS Technology, ICQT'06*, ST Malo, France, Lecture Notes in Computer Science, 2004.
30. Y. Hayel, V. Ramos and B. Tuffin. Optimal Static Pricing of Reverse-Link DS-CDMA Multi-class Traffic. *In the proceedings of the 3rd International Conference on Quantitative Evaluation of Systems (QEST)*, University of California at Riverside, USA, IEEE CS Press, September 2006.
31. B. Tuffin, P. L'Ecuyer and W. Sandmann. Robustness Properties in Simulations of Highly Reliable Systems. *In the Proceedings of RESIM 2006*, Bamberg, Germany, October 2006.
32. P. L'Ecuyer and B. Tuffin. Splitting with Weight Windows to Control the Likelihood Ratio in Importance Sampling. *In the Proceeding of the first VALUETOOLS Conference*, ACM Press, Pisa, Italy, October 2006.
33. Y. Hayel, G. Rubino, B. Tuffin and M. Varela. A New Way of Thinking Utility in Pricing Mechanisms : A Neural Network Approach. *In Proceedings of the 13th CLAIO (Congreso Latino-Iberoamericano de Investigacion Operativa)*, Montevideo, Uruguay, 2006.
34. P. L'Ecuyer, V. Demers and B. Tuffin. Splitting for rare-event simulation. *In Proceedings of the 2006 Winter Simulation Conference*, La Marina del Rey, CA, December 2006.
35. P. Maillé and B. Tuffin. Why VCG auctions can hardly be applied to the pricing of inter-domain and ad hoc networks. *In Proceedings of the 3rd EURO-NGI Conference on Next Generation Internet Networks, Design and Engineering for Heterogeneity (NGI 2007)*, Trondheim, Norway. May 21-23 2007.
36. L.M. Le Ny and B. Tuffin. Pricing a threshold-queue with hysteresis. *In Proceedings of the 18th IASTED International Conference on Modelling and Simulation (MS 2007)*, Montreal, Canada, May 30-June 1, 2007.
37. J. Blanchet, P. Glynn, P. L'Ecuyer, W. Sandmann, B. Tuffin. Asymptotic Robustness of Estimators in Rare-Event Simulation. *In Proceedings of the 2007 INFORMS Simulation Society (I-Sim) Research Workshop*, Fontainebleau, France, July 2007.
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42. P.-T. de Boer, P. L'Ecuyer, G. Rubino, and B. Tuffin. Estimating the Probability of a Rare Event Over a Finite Horizon. *Proceedings of the 2007 Winter Simulation Conference*, IEEE Press, 2007.
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46. P. L'Ecuyer and B. Tuffin, Approximate Zero-Variance Simulation. In *Proceedings of the 2008 Winter Simulation Conference*, IEEE Press, 2008.
47. H. Jung, B. Tuffin. Pricing for Heterogeneous Services in OFDMA 802.16 Systems. In *Proceedings of IEEE WONS (International Conference on Wireless On-demand Network Systems and Services)*, Snow Bird, Utah, USA, February 2009.
48. P. Maillé and B. Tuffin. Optimization of Transmission Power in Competitive Wireless Networks. In *Sixth International Workshop on Internet Charging and QoS Technology, ICQT'09*, Aachen, Germany, Lecture Notes in Computer Science, May 2009.
49. H. Le Cadre, M. Bouhtou and B. Tuffin. A Pricing model for a Mobile Network Operator sharing limited resource with a Mobile Virtual Network Operator. In *Sixth International Workshop on Internet Charging and QoS Technology, ICQT'09*, Aachen, Germany, Lecture Notes in Computer Science, May 2009.
50. H. Le Cadre, M. Bouhtou and B. Tuffin. Competition for Subscribers Between Mobile Operators Sharing a Limited Resource. *Proceedings of GameNets'09*, Istanbul, Turkey, May 2009.
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52. H. Cancela, M. El Khadiri, G. Rubino and B. Tuffin. A Recursive Variance Reduction Technique with Bounded Relative Error of Communication Network Reliability Estimation. In the *proceedings of the 6th St.Petersburg Workshop on Simulation*, pages 703-708, Saint Petersburg, Russia, July 2009.
53. P. L'Ecuyer and B. Tuffin. Limiting Distributions for Randomly-Shifted Lattice Rules. In the *proceedings of the 6th St.Petersburg Workshop on Simulation*, pages 885-890, Saint Petersburg, Russia, July 2009.
54. H. Le Cadre, M. Bouhtou and B. Tuffin. Modeling Mobile Network Operator and Mobile Virtual Network Operator Dynamic Interconnexion Relations. *Proceedings of the 21st International Teletraffic Congress (ITC 21)*, Paris, France, September 2009.
55. P. Maille, M. Naldi and B. Tuffin. Price War with Migrating Customers. *17th Annual Meeting of the IEEE/ACM International Symposium on Modelling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS 2009)*, IEEE Computer Society, London, UK, September 2009.

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60. P. Maillé and B. Tuffin. On the interest of introducing randomness in ad-word auctions. *Proceedings of the 1st. IFIP International Conference Network of the Future*, Brisbane, Australia, 20-23 September 2010.
61. H. Tran Hoang and B. Tuffin. A Distributed Auction-Based Algorithm to Allocate Bandwidth over Paths. *Proceedings of the 4th Workshop on Network Control and Optimization (NETCOOP'10)*, Ghent, Belgium, 29 November-1 December 2010.
62. P. Maillé, B. Tuffin and J.M. Vigne. Economics of Technological Games Among Telecommunication Service Providers. In *Proceedings of IEEE Globecom 2010*, Miami, FL, USA, December 2010.
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65. P. Maille and B. Tuffin. Sponsored Search Engines in Competition : Advertisers Behavior and Engines Optimal Ranking Strategies. *Proceedings of the 19th Annual Meeting of the IEEE/ACM International Symposium on Modelling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS 2011)*, IEEE Computer Society, Singapore, July 25-27, 2011.
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67. P. Maille, P. Reichl and B. Tuffin. Interplay between security providers, consumers, and attackers : a weighted congestion game approach. *Proceedings of GameSec 2011*, College Park, Maryland, November 2011. IEEE Xplore.
68. L. Guijarro, V. Pla, B. Tuffin, P. Maille and J.R. Vidal. Competition and bargaining in wireless networks with spectrum leasing. In *Proceedings of IEEE Globecom 2011*, Houston, TX, USA, December 2011.
69. Z. Botev, P. L'Ecuyer and B. Tuffin. An importance sampling method based on a one-step look-ahead density from a Markov chain. In the *Proceedings of the 2011 Winter Simulation Conference*, Phoenix, AZ, December 2011.

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71. F. BouSSION, P. Maillé and B. Tuffin. Net Neutrality Debate : Impact of Competition among ISPs. In the *Proceedings of the Fourth International Conference on COMMunication Systems and NETWORKS (COMSNETS)*, IEEE, Bangalore, India, January 3-7, 2012.
72. P. Maillé, B. Tuffin and J.M. Vigne. Competition between wireless service providers sharing a radio resource. *Proceedings of the 11th IFIP Networking Conference*, Lecture Notes in Computer Science, Prague, Czech Republic, 21-25 May 2012.
73. G. D'Acquisto, P. Maille, M. Naldi and B. Tuffin. Impact of non-neutral wholesale prices for content providers on retail prices. *Proceedings of the 8th Euro-NF Conference on Next Generation Internet (NGI 2012)*, IEEE, Karlskrona, Sweden, June 25-27, 2012.
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77. A. Ridder and B. Tuffin. Probabilistic Bounded Relative Error for Rare Event Simulation Learning Techniques. In the *Proceedings of the 2012 Winter Simulation Conference*, Berlin, Germany, December 2012.
78. Z. Botev, P. L'Ecuyer and B. Tuffin. Dependent Failures in Highly Reliable Static Networks. In the *Proceedings of the 2012 Winter Simulation Conference*, Berlin, Germany, December 2012.
79. Z. Botev, P. L'Ecuyer, and B. Tuffin, Modeling and Estimating Small Unreliabilities for Static Networks with Dependent Components, *Proceedings of SNA-MC 2013 : Supercomputing in Nuclear Applications and Monte Carlo*, Paris, October 2013.
80. P. L'Ecuyer, S. Saggadi, and B. Tuffin, An Adaptive Zero-Variance Importance Sampling Approximation for Static Network Dependability Evaluation, *Proceedings of SNA-MC 2013 : Supercomputing in Nuclear Applications and Monte Carlo*, Paris, October 2013.
81. L. Guijarro, V. Pla and B. Tuffin. Entry game under opportunistic access in cognitive radio networks : a priority queue model. *Proceeding of the IFIP Wireless days*, IEEE, Valencia, Spain, 13-15 Nov 2013.
82. P. Maillé and B. Tuffin. How Do Content Delivery Networks Affect the Economy of the Internet and the Network Neutrality Debate?. In the *Proceedings of the 10th International Conference on Economics of Grids, Clouds, Systems, and Services (GECON'2014)*. Lecture Notes in Computer Sciences, Springer-Verlag, Cardiff, UK, September 16-18, 2014.
83. P. Maillé, K. Pires, G. Simon and B. Tuffin. How Neutral is a CDN? An Economic Approach. In the *Proceedings of the 10th International Conference on Network and Service Management (CNSM)*, IEEE, Rio de Janeiro, Brazil, Nov 17-21, 2014.
84. B. Tuffin. Highly Reliable Markovian Systems Interval Availability Estimation by Importance Sampling. In the *Proceedings of the 2014 Winter Simulation Conference*, Savannah, USA, December 2014.

85. P. Maillé and B. Tuffin. Impact of Content Delivery Networks on service and content innovation. Proceedings of *NetEcon 2015 : The 10th Workshop on the Economics of Networks, Systems and Computation*, Portland, OR, USA, June 15, 2015.
86. P. Maille and B. Tuffin. Users facing volume-based and flat-rate-based charging schemes at the same time. In the *Proceedings of the 8th Latin American Network Operations and Management Symposium (LANOMS 2015)*, IEEE Explore, Joao Pessoa, Brazil, October 1-3, 2015. **Best short paper award.**
87. P. Maillé, G. Simon and B. Tuffin. Impact of Revenue-Driven CDN on the Competition among Network Operators. In the *Proceedings of the 11th International Conference on Network and Service Management (CNSM)*, IEEE, Barcelona, Spain, November 2015.
88. B. Tuffin. Side Payments as Barriers to Entry in Non-Neutral Networks. In the proceedings of the *12th Conference of Telecommunication, Media and Internet Techno-Economics (CTTE)*, Munich, Germany, November 2015.
89. H. Cancela, M. El Khadiri, G. Rubino and B. Tuffin. On the robustness of Fishman's bound-based method for the network reliability problem. In the *Proceedings of the 2015 Winter Simulation Conference*, Huntington Beach, CA, USA, December 2015.
90. P. L'Ecuyer, P. Maille, N. Stier-Moses, and B. Tuffin. Search (Non-)Neutrality and Impact on Innovation. *NetEcon 2016 : The 11th Workshop on the Economics of Networks, Systems and Computation*, Juan-les-Pins, France, June 14, 2016.
91. P. Maille, G. Simon and B. Tuffin. Vertical Integration of CDN and Network Operator : Model and Analysis. In the proceedings of the *IEEE/ACM International Symposium on Modelling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS 2016)*, IEEE Computer Society, London, UK, September 2016.
92. A. Rai, R. Valenzuela, B. Tuffin, G. Rubino and P. Dersin. Approximate Zero-Variance Importance Sampling For Static Network Reliability Estimation With Node Failures And Application To Rail Systems. In the *Proceedings of the 2016 Winter Simulation Conference*, Arlington, VA, USA, December 2016.
93. P. Maille and B. Tuffin. Non-Neutrality Pushed by Big Content Providers. In the *Proceedings of the 14th International Conference on Economics of Grids, Clouds, Systems, and Services (GECON'2017)*. Lecture Notes in Computer Sciences, Springer-Verlag, Anglet, France, September 19-21, 2017.
94. P. Maille and B. Tuffin. How does imposing free roaming in EU impact users and ISPs' relations? In the *Proceedings of the 8th International Conference Network of the Future*, London, UK, November 22-24, 2017.
95. P. Maille and B. Tuffin. Enforcing free roaming among UE countries : an economic analysis. In the *Proceedings of the 13th International Conference on Network and Service Management (CNSM)*, IEEE, Tokyo, Japan, Nov 26-30, 2017
96. P.W. Glynn, M.K. Nakayama, and B. Tuffin. On the estimation of the mean time to failure by simulation. In the *Proceedings of the 2017 Winter Simulation Conference*, Las Vegas, NV, USA, December 2017.
97. P. Maille and B. Tuffin. Analysis of Sponsored Data in the Case of Competing Wireless Service Providers. In the proceedings of the *9th International Conference on Network Games, Control and Optimization, NETGCOOP*, Lecture Notes in Computer Science (LNCS), New York City, NY, USA, November 2018.

98. P. Maille, B. Tuffin, Joshua Peignier and Estelle Varloot. Pricing of Coexisting Cellular and Community Networks. In the proceedings of the *9th International Conference on Network Games, Control and Optimization, NETGCOOP*, Lecture Notes in Computer Science (LNCS), New York City, NY, USA, November 2018.
99. P.W. Glynn, M.K. Nakayama, and B. Tuffin. Using Simulation to Calibrate Exponential Approximations to Tail-Distribution Measures of Hitting Times to Rarely Visited Sets. In the *Proceedings of the 2018 Winter Simulation Conference*, Gothenburg, Sweden, December 2018.

#### G. Invited (keynote) international conferences and Tutorials

1. B. Tuffin. Pricing schemes in Telecommunication networks. In *4th Latino-american days on theoretical economy (JOLATE)*, Mexico City, Mexico, 2002.
2. B. Tuffin. Introduction à la simulation d'événements rares. In *9ème Atelier de Performances (AEP9)*, Aussois, France, Juin 2008.
3. G. Rubino and B. Tuffin. An Introduction to Monte Carlo Methods and Rare Event Simulation. *Tutorial of the 5th International Conference on Quantitative Evaluation of SysTems (QEST)*. IEEE CS Press, Budapest, Hungary, September 2009.
4. B. Tuffin. Pricing in telecommunication networks : from congestion control and incentives design to competition among providers. *5th Lanti-Americ Networking Conference, LANC 2009*, Keynote talk, Pelotas, Brazil, September 2009.
5. B. Tuffin. Pricing in telecommunication networks : some issues and models. *3rd IFIP/IEEE International Workshop on Bandwidth on Demand and Federation Economics*, Keynote talk, Osaka, Japan, April 2010.
6. B. Tuffin. Some applications of importance sampling to dependability analysis. Plenary talk, International Conference on Monte Carlo techniques, Paris, France, July 2016.
7. B. Tuffin. Network Neutrality : Modeling and Challenges. *14th International Conference on Economics of Grids, Clouds, Systems & Services (GECON 2017)*, Keynote talk, Bayonne Anglet, France, September 19-21, 2017.
8. B.Tuffin. Recherche opérationnelle et théorie des jeux pour l'analyse de la neutralité du Net. Tutoriel. *19ème congrès de la Société Française de Recherche Opérationnelle et d'Aide A la Decision (ROADEF)*, Lorient, France, 21-23 Février 2018.

#### H. Other international conferences

1. H. Cancela, G. Rubino et B. Tuffin, Fast Monte Carlo Methods for evaluating Highly Dependable Markovian Systems. *Second International Conference on Monte Carlo and quasi-Monte Carlo Methods in Scientific Computing, Salzburg, Austria, July 1996*.
2. D. Ros and B. Tuffin. Charging in Packet Networks Using the Paris Metro Pricing Scheme. In *Optimization Days'03*, Montréal, 2003.
3. B. Tuffin. Some new research directions about hybrid Monte Carlo methods. In *Vth IMACS Seminar on Monte Carlo Methods MCM-2003*, Berlin, September 2003.
4. C. Lécot and B. Tuffin. Simulating Markov Chains with Quasi-Monte Carlo Methods. In *Vth IMACS Seminar on Monte Carlo Methods MCM-2003*, Berlin, September 2003.
5. G. Ökten, B. Tuffin. A Central Limit Theorem for a Hybrid-Monte Carlo Method. *Fifth International Conference on Monte Carlo and quasi-Monte Carlo Methods*, Juan-les-Pins, France, June 2004.

6. B. Tuffin. Coverage Function of Randomized Quasi-Monte Carlo Methods. *INFORMS Applied Probability Conference*, Ottawa, Canada, July 2005.
7. P. L'Ecuyer, C. Lécot and B. Tuffin. A New Randomized Quasi-Monte Carlo Approach for Markov Chains. *INFORMS Applied Probability Conference*, Ottawa, Canada, July 2005.
8. V. Demers, P. L'Ecuyer and B. Tuffin. Combining Randomized Quasi-Monte Carlo with Splitting for Rare-Event Simulation. *Sixth International Conference on Monte Carlo and quasi-Monte Carlo Methods*, Ulm, Germany, August 2006.
9. H. Cancela, P. L'Ecuyer, M. Lee, G. Rubino and B. Tuffin. Refinements of a path-based efficient algorithm for network reliability estimation in the rare event case. In *Proc. of Probability and Statistics in Science and Technology 2007*, Porto, Portugal, 2007.
10. H. Cancela, P. L'Ecuyer, M. Lee, G. Rubino and B. Tuffin. Combining Path-Based Methods, RQMC and Zero-Variance Approximations in Static Model Analysis. In *Seventh International Conference on Monte Carlo and quasi-Monte Carlo Methods*, Montreal, Canada, July 2008.
11. P. L'Ecuyer and B. Tuffin. Approximating zero-variance importance sampling in reliability settings. In *Efficient Monte Carlo : From Variance Reduction to Combinatorial Optimization A Conference on the Occasion of R. Y. Rubinstein's 70th Birthday*, Sandbjerg Estate, Sønderborg, Denmark 14-18 July 2008.
12. P. L'Ecuyer, J. Blanchet, B. Tuffin, P.W. Glynn. Asymptotic Robustness of Estimators in Rare-Event Simulation. In the *7th International Workshop on Rare Event Simulation (RESIM 2008)*, Rennes, France, September 24-26 2008.
13. P. Maillé and B. Tuffin. Price War Among Telecommunication Providers. *1st Euro-NF Socio-Economics Workshop*, Athens, Greece, October 16-17, 2008.
14. P. Maillé, M. Naldi and B. Tuffin. Challenges in game-theoretic modeling of competition and regulation for migrating customers. *1st Euro-NF Socio-Economics Workshop*, Athens, Greece, October 16-17, 2008.
15. P. L'Ecuyer and B. Tuffin. Limiting Distributions for Randomly-Shifted Lattice Rules. *15th INFORMS Applied Probability Conference*, Cornell University, Ithaca, New York, U.S.A., July 2009.
16. P. L'Ecuyer and B. Tuffin. Limiting Distributions for Randomly-Shifted Lattice Rules. *IMACS MCM 2009 Conference*, Bruxelles, Belgium, September 2009.
17. F. Bastin, C. Cirillo, P. L'Ecuyer and B. Tuffin. Estimation strategies for complex discrete choice models. *12th Conference of the International Association for Travel Behaviour Research*, Jaipur, India, December 13-18, 2009.
18. P. Maillé and B. Tuffin. Competition Among Providers in Loss Networks. *ALIO-INFORMS Joint International Meeting*, Buenos Aires, Argentina, June 6-9, 2010.
19. H. Cancela, M. El Khadiri, G. Rubino and B. Tuffin. Recursive Variance Reduction Estimators for the Static Communication Network Reliability Problem. In the *8th International Workshop on Rare Event Simulation (RESIM 2010)*, Cambridge, UK, June 2010.
20. A. Ridder and B. Tuffin. Efficiency of the cross-entropy method in Markov chain problems. In the *8th International Workshop on Rare Event Simulation (RESIM 2010)*, Cambridge, UK, June 2010.
21. P. Maillé and B. Tuffin. Games Among Providers in Telecommunication Networks. *INFORMS Annual Meeting*, Austin, Texas, U.S.A, November 7-10, 2010.

22. B. Tuffin. Approximation of Zero-Variance Importance Sampling in Reliability Settings. *7th Conference on Extreme Value Analysis, Probabilistic and Statistical Models and their Applications*. June 27th-July 1st, 2011, Lyon, France.
23. P. L'Ecuyer, Z. Botev and B. Tuffin. Approximate Zero-Variance Simulation in Rare Event Settings. In *IMACS MCM 2011 Conference*, Borovets, Bulgaria, September 2011.
24. P. L'Ecuyer and B. Tuffin. Network reliability simulation with extension to Marshall-Olkin copula-based dependent failures. *Eleventh International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (MCQMC'14)*, Leveun, Belgium, April 2014.
25. P. L'Ecuyer, C. Lecot and B. Tuffin. Convergence rates for the Array-RQMC method. *Eleventh International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (MCQMC'14)*, Leveun, Belgium, April 2014.
26. H. Cancela, M. El Khadiri, G. Rubino and B. Tuffin. On the robustness of Fishman's bound-based method for the network reliability problem. In the *10th International Workshop on Rare Event Simulation (RESIM 2014)*, Amsterdam, The Netherlands, August 27-29 2014.
27. P. L'Ecuyer, C. Lecot and B. Tuffin. Recent developments on Array-RQMC. *IMACS MCM 2015 Conference*, Linz, Austria, July 2015.
28. Z.I. Botev, P. L'Ecuyer, R. Shah and B. Tuffin. Conditioning by Permutation Monte Carlo for Continuous-Time Markov Chains. Eighth International Workshop on Simulation, Vienna, Austria, September 2015.
29. Z. Botev, P. L'Ecuyer and B. Tuffin. Permutation Monte Carlo : applications, analysis and extension. In the *11th International Workshop on Rare Event Simulation (RESIM 2016)*, Eindhoven, The Netherlands, April 2016.
30. P. Maille and B. Tuffin. Auctions For Online Ad Space Among Advertisers Mixing Pay-per-view And Pay-per-click. In the *Infirms Annual Meeting*, Nashville, TN, USA, Nov 13-16, 2016.
31. P. Maille, G. Simon and B. Tuffin. On Revenue-oriented Content Delivery Networks And Their Impact On Net Neutrality. In the *Infirms Annual Meeting*, Nashville, TN, USA, Nov 13-16, 2016.
32. A. Rai, B. Tuffin, R. Valenzuela, G. Rubino, P. Dersin. Availability Estimation of Markovian Reliability Systems with Logistics via Cross-Entropy. *13th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (MCQMC'18)*, Rennes, France, July 2018.
33. P. Maille, B. Tuffin. A Nonatomic Congestion Game Approach to Net (Non-)Neutrality. PGM days, EDF'Lab Paris-Saclay, France, Nov. 20th-21st, 2018.

## I. National conferences

1. S. Collas and B. Tuffin. Creation of a Dynamic Model Language and Application of Monte Carlo Methods for the Reliability Analysis of Industrial Complex Systems. In *proceedings of  $\lambda\mu - 13$* , Lyon, Mars 2002.
2. Y. Hayel and B. Tuffin. Optimisation d'un modèle de tarification de l'Internet. *Dans 5ème congrès de la Société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'2003)*, Avignon, France, Février 2003.
3. P. Maillé and B. Tuffin. Mécanisme d'enchères au second prix pour l'allocation de bande passante dans les réseaux *Dans 5ème congrès de la Société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'2003)*, Avignon, France, Février 2003.

4. Y. Hayel and B. Tuffin. Tarification des réseaux à différenciation de services. *Dans Journées des Doctorants en Informatique et Réseaux (JDIR)*, Lannion, France, Novembre 2004.
5. P. Maillé and B. Tuffin. Enchères pour l'allocation de ressources réseaux. *Dans Journées des Doctorants en Informatique et Réseaux (JDIR)*, Lannion, France, Novembre 2004.
6. B. Tuffin. Entropie croisée pour la simulation d'événements rares, Journées MAS, Lille, France, Septembre 2006.
7. P. Coucheney, P. Maillé and B. Tuffin. Compétition entre fournisseurs d'accès internet : comparaison entre le peering, le transit facturé et la menace de déconnexion. *Dans 13ème congrès de la Société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'2012)*, Angers, France, Avril 2012.
8. B. Tuffin. Approximation de l'échantillonnage préférentiel à variance nulle, avec applications en fiabilité . *Journées MAS*, Clermont-Ferrand, France, Aout 2012.
9. P. Maillé, B. Tuffin. Enchères pour espaces publicitaires avec annonceurs sensibles aux vues et aux clics. *17ème congrès de la Société Française de Recherche Opérationnelle et d'Aide A la Decision (ROADEF)*, Compiègne, France, Février 2016.

#### J. Submitted

1. Zdravko Botev, Pierre L'Ecuyer, Bruno Tuffin. Reliability Estimation for Networks with Minimal Flow Demand and Random Link Capacities.
2. P. Maille and B. Tuffin. Big Content Providers Weighing on Non-Neutrality ?
3. A. Kamoun, P. Maillé and B. Tuffin. Evaluating search engines and defining a consensus implementation.
4. P. Maille and B. Tuffin. A Network Reliability Game.

#### K. Other research reports

1. B. Tuffin, Improvement of Halton sequences distribution. PI IRISA N° 998, Mars 1996.
2. B. Tuffin, Réduction des bornes de l'erreur d'approximation des méthodes de quasi-Monte Carlo. PI IRISA N° 1133, Septembre 1997.
3. H. Le Cadre, M. Bouhtou and B. Tuffin. Modeling Consumers' Preference to Price Bundle Offers in Telecommunication industry Study for a Single Provider.

#### L. Misc.

1. B. Tuffin and P. Maillé, Auctioning for Bandwidth in Communication Networks, *ERCIM News No.57, Special Theme : Games Technology*, Pages 32-33, April 2004.
2. B. Tuffin, H. Cancela, P. Rodriguez. End-to-End Reliability-Dependent Pricing of Network Services. *International Conference on Industrial Logistics (ICIL'05), Poster Session*, Montevideo, Uruguay, February 2005.
3. P.W. Glynn and B. Tuffin. Guest editorial. Performance evaluation methodologies and tools. *Performance Evaluation*, Volume 65, Issues 11+12, Pages 787-788, November 2008.
4. Panel session member "Bandwidth-on-Demand : Are Use, Technologies, and Pricing Aligned ?". *3rd IFIP/IEEE International Workshop on Bandwidth on Demand and Federation Economics*, Osaka, Japan, April 2010.
5. B. Stiller, B. Tuffin, P. Reichl and T. Anh Trinh. Guest editorial. "Socio-economic Issues of Next Generation Networks". Special issue of the *Telecommunication Systems Journal*. To appear.

6. Eitan Altman, Chadi Barakat, Pierre Bernhard, Eric Fleury, Philippe Jacquet, Arnaud Legout, Corinne Touati, Bruno Tuffin, Sulan Wong. Our answer to the French Consultation over Network Neutrality (9th April to 17th may, 2010) .
7. Co-writer of *Inria's response* to ARCEP consultation about network neutrality. 2012.
8. B. Tuffin and P. Maillé. Le problème de la neutralité du Net est-il réglé? Position paper, May 2014.
9. B. Tuffin and P. Maillé. La neutralité du Net : le débat est-il bien posé ? (1). The Conversation, 30 novembre 2015.  
<https://theconversation.com/neutralite-du-net-le-debat-est-il-bien-pose-1-50615>
10. B. Tuffin and P. Maillé. La neutralité du Net : une approche plus large est nécessaire (2). The Conversation, 1er décembre 2015.
11. P. Maillé and B. Tuffin. Response to the public consultation on draft BEREC Guidelines on implementation of net neutrality rules. 2016.
12. B. Tuffin. La simulation de Monte-Carlo. Interstices.info. 2017. [https://interstices.info/jcms/int\\_69164/la-simulation-de-monte-carlo](https://interstices.info/jcms/int_69164/la-simulation-de-monte-carlo)
13. P. Maillé and B. Tuffin. La fin des frais d'itinérance dans l'Union européenne en 2017, est-ce la panacée? The Conversation, 5 mars 2018.
14. P. Maillé and B. Tuffin. Conflit Orange-TF1 : un problème de neutralité? 2018.
15. P. Maillé and B. Tuffin. The end of roaming charges in the European Union : a cure-all solution ? I'MT Tech. IMT science and technology news, 4th of June 2018.

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## Seminars, Summer schools and workshops

1. B. Tuffin, Méthodes de quasi-Monte Carlo et application aux fiabilités des réseaux. University of Marne la Vallée, June 1995.
2. B. Tuffin, Méthodes de quasi-Monte Carlo : suites efficaces et contrôle de l'erreur. IRMAR, University of Rennes 1, May 1996.
3. B. Tuffin, Méthodes de quasi-Monte Carlo : suites efficaces et contrôle de l'erreur. University of Orsay, May 1996.
4. B. Tuffin, Simulation accélérée des systèmes Markoviens hautement fiables. University of Bretagne Occidentale, February 1998.
5. B. Tuffin, Les méthodes de Monte Carlo et quasi-Monte Carlo en calcul scientifique, University of Chambéry, March 1998.
6. B. Tuffin, Charging for telecommunication network use. UNAM, Mexico City, October 2002.
7. B. Tuffin Méthodes de quasi-Monte Carlo et applications en télécommunications. GERAD, Montreal, May 2003.
8. B. Tuffin, Tarification des réseaux de communication. DIRO, University of Montreal, May 2003.
9. E. Altman, D. Barman, R. El Azouzi, D. Ros, B. Tuffin. Pricing Differentiated Services : A Game-Theoretic Approach. 3ème Journée Optimisation et Tarification, Versailles, France, October 2003.
10. Y. Hayel, D. Ros, B. Tuffin. Less-than-Best-Effort Services : Pricing and Scheduling. 3ème Journée Optimisation et Tarification, Versailles, France, October 2003.

11. P. Maillé and B. Tuffin. Multi-Bid Auctions for Bandwidth Allocation in Communication Networks. 3ème Journée Optimisation et Tarification, Versailles, France, October 2003.
12. E. Altman, E. El-Azouzi, D. Ros and B. Tuffin. Loss for Competing TCP/IP Connections. 2nd ARC TCP Workshop, ENS Paris, November 2003.
13. B. Tuffin. Quasi-Monte Carlo methods with applications in telecommunications. Ball State University (Indiana), Décembre 2003.
14. P. Maillé and B. Tuffin. A Survey on Multi-Bid Auctions. EuroNGI W.G.5.4 Workshop, INRIA Sophia-Antipolis, October 2004.
15. P. Maillé and B. Tuffin. Multi-Bid Auctions for Pricing Telecommunication Networks, Athens University of Economics and Business, November 2004.
16. H. Cancela, G. Rubino and B. Tuffin. Robustesse des techniques de Monte Carlo dans l'analyse d'événements rares. Université d'Amiens (France), Mai 2005.
17. B. Tuffin. Méthodes de quasi-Monte Carlo et applications en télécommunications. Université d'Amiens (France), Mai 2005.
18. H. Cancela, G. Rubino and B. Tuffin. Robustesse des techniques de Monte Carlo dans l'analyse d'événements rares. CRT, Université de Montréal, Juillet 2005.
19. B. Tuffin and G. Ökten. A hybrid Monte Carlo method with applications in finance. Advanced Finance Seminar, Florida State University, Tallahassee, September 2005.
20. B. Tuffin. Tarification des réseaux pour différencier les services. GERAD seminar, University of Montreal, February 2006.
21. B. Tuffin and P. Maillé. A decentralized learning algorithm when pricing a RED buffer. Internet Economics Dagstuhl seminar, Dagstuhl, Germany, March 2006.
22. B. Tuffin, P. L'Ecuyer and V. Demers. Rare event simulation. IFIP WG7.3 meeting, St Malo, June 2006.
23. B. Tuffin and P. Maillé. Analysis of Price Competition in a Slotted Resource Allocation Game. Séminaire de CIRRELT, Montreal, November 2007.
24. B. Tuffin and P. Maillé. Analysis of Price Competition in a Slotted Resource Allocation Game. Workshop on Pricing and Revenue Management. France Telecom, December 2007.
25. B. Tuffin and P. Maillé. Analysis of Price Competition in a Slotted Resource Allocation Game. ECONTTEL COST Meeting, Sevilla, April 2008.
26. P. Maillé and B. Tuffin. Analysis of competition games among (wireless) operators. *EconTel Workshop*, Stockholm, Sweden, June 2009.
27. B. Tuffin. Pricing in telecommunication networks : from congestion control and incentives design to competition among providers. *INRIA - Bell Labs Workshop II : Fundamentals of Communications and Networking*, Rocquencourt, France, October 2009.
28. B. Tuffin. Rare event simulation. Séminaire du département de Mathématiques de l'Université de Bretagne Occidentale, Brest, February 2010.
29. P. Maillé and B. Tuffin. Competition among wireless operators. *WINEM open seminar*, Sophia-Antipolis, France, February 2010.
30. B. Tuffin. Advanced methods for rare event simulation. CIMPA School : Applied Mathematics and Engineering, Solis, Uruguay, March 2010.
31. B. Tuffin. Introduction à la simulation d'événements rares. Exemples d'application en sûreté de fonctionnement et évaluation des performances. Journée vérification et contrôle de systèmes stochastiques, Campus Ker Lann, 6 Avril 2010.

32. B. Tuffin. Pricing in telecommunication networks : from congestion control and incentives design to competition among providers. Technicolor Lab retreat, Avril 2010.
33. B. Tuffin. A short introduction to adword auctions and the advantage of introducing randomness. Technicolor Lab retreat, Avril 2010.
34. B. Tuffin. Introducing randomness in adword auctions. EONTEL COST Meeting, Ghent, Belgium, June 2010.
35. B. Tuffin. Game theory, pricing and incentives in networks, with applications. 3rd Euro-NF Summer School on Opportunistic Networking, 6h class, Valence, Spain, June 28-July 2, 2010.
36. P. Maille and B. Tuffin. Introduction to adword auctions. FTW, Vienna, Austria, November 2010.
37. B. Tuffin, Pricing in telecommunication networks : from congestion control and incentives design to competition among providers. ETICS Workshop, Versailles, France, June 2011.
38. B. Tuffin, Adword auctions : impact of ranking strategies and competition on search engines revenues. INRIA, Grenoble, August 2011.
39. P. Maille and B. Tuffin. Sponsored Search Engines in Competition : Advertisers Behavior and Engines Optimal Ranking Strategies. EONTEL WG4 meeting, Vienna, Austria, September 2011.
40. B. Tuffin. Models for Network Provider Competition. Final Workshop, SISCom International Research Chair "Future Telecommunication Ecosystems", Rennes, September 19, 2011.
41. P. Maille and B. Tuffin. Budget-limited advertising game on sponsored search engines in competition. Impact on engine ranking. EONTEL COST Workshop, Budapest, September 2011.
42. B. Tuffin, Adword auctions : impact of ranking strategies and competition on search engines revenues. Vrije Universiteit Amsterdam, The Netherlands, January 2012.
43. B. Tuffin (joint work with P. Maillé and P. Coucheney). Introduction to the Network Neutrality Debate. Description of a related model of ISP Inter-Relations : Traffic Exchange, Revenue Sharing, and Disconnection Threat. Université de Montréal, Canada, Nov. 2012.
44. B. Tuffin (joint work with P. Maillé and P. Coucheney). Introduction to the Network Neutrality Debate. Description of a related model of ISP Inter-Relations : Traffic Exchange, Revenue Sharing, and Disconnection Threat. The Chinese University of Hong-Kong, Nov. 2012.
45. P. Coucheney, P. Maillé and B. Tuffin. An analysis of ISP Inter-Relations : Traffic Exchange, Revenue Sharing, and Disconnection Threat. Colloquium Rennais des Sciences du Numérique, July, 4 2013.
46. B. Tuffin. Improvements of importance sampling-based static reliability estimation. Stic-AmSud workshop on network performance and dependability, Montevideo, Uruguay, December, 17 2013.
47. G. Rubino and B. Tuffin. Introduction to Monte Carlo methods/ One day course/seminar at ALSTOM, France, May 2014.
48. B. Tuffin. La neutralité du Net. Tr@nspolo : transparence politique et organisationnelle dans les sociétés numériques, Avignon, July 2014.
49. B. Tuffin. Importance Sampling and variance reduction techniques. Summer school on Modeling and Numerical Methods for Uncertainty Quantification ? (MNMUQ 2014), Porquerolles Island, France, 1-5 September 2014.
50. B. Tuffin. Rare event simulation applied to dependability analysis. Université de Pau, May 2015.

51. B. Tuffin (joint work with P. L'Ecuyer, P. Maillé, N. Stier-Moses). Revenue-Maximizing Rankings for Online Platforms with Quality-Sensitive Consumers. GRD COS, Toulouse, September 2015.
52. B. Tuffin (joint work with P. Maillé, G. Simon). On revenue-oriented Content Delivery Networks and their impact on Net Neutrality. GEARD, Université de Montréal, Canada, Sept. 2015.
53. B. Tuffin. Rare event simulation applied to dependability analysis. GDR MASCOT-NUM, IHP Paris, October 2015.
54. B. Tuffin (joint work with P. L'Ecuyer, P. Maillé, N. Stier-Moses). Stochastic Optimization for Search Engines : Revenue-Maximizing Rankings with Quality-Sensitive Consumers. NTNU, Trondheim, Norway, November 2015.
55. B. Tuffin. Net neutrality. IRISA Evaluation by HCRES, Jan. 2016.
56. P. L'Ecuyer, P. Maillé, N. Stier-Moses, B. Tuffin. Stochastic Optimization for Search Engines : Revenue-Maximizing Rankings with Quality-Sensitive Consumers. CREM-IRISA Workshop on Network Economics, January 2016.
57. P. Maillé, G. Simon, B. Tuffin. On revenue-oriented Content Delivery Networks and their impact on Net Neutrality. CREM-IRISA Workshop on Network Economics, January 2016.
58. B. Tuffin. La neutralité du Net. Journées scientifiques Inria, Rennes, Juin 2016.
59. P. Maille and B. Tuffin. Auctions For Online Ad Space Among Advertisers Mixing Pay-per-view And Pay-per-click. DIRO, Université de Montréal, Canada, Nov 30, 2016.
60. B. Tuffin. Neutralité du Net : introduction, modélisation et défis. ENS Rennes, Feb. 7, 2017.
61. B. Tuffin. La fausse neutralité du net ? ENS-ENSSIB, Lyon, Mars 2017.
62. B. Tuffin. Estimating the mean and tail-distribution measures of time to failure by simulation. Meeting COSMOS(Contrôle et Optimisation Stochastique, MODélisation et Simulation), GR Recherche Opérationnelle CNRS, June 18, 2018.
63. B. Tuffin. Mean Time To Failure Estimation by simulation. RNA Kinetics Day, LRI October 3, 2018.

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## Grants for academic relationships

- *Coordinator of the PRIXNET ARC* : Internet pricing. INRIA's cooperative research action 2003-2004 with MISTRAL project-team at INRIA Sophia-Antipolis, the university of Versailles-St Quentin, France Telecom R&D and IBM.
- *Member of the TCP ARC* : Models and Algorithms for TCP/IP Networks . An INRIA's cooperative research action 2003-2004 with INRIA MISTRAL, PLANETE, TREC, RAP project-team, the EPFL (Lausanne) and France Telecom R&D.
- *Local coordinator of the l'ACI Sécurité informatique SURE-PATHS*. Research project 2003-2005 with the University of Versailles-St Quentin, and ID lab. at Grenoble.
- ECOS Sud (Uruguay) cooperaion program 2004-2006 : *The Internet as convergent network* with the University de le republica at Montevideo (in collaboration with ENST Bretagne and the University of Paris 11).

- Member of the EuroNGI European Network of Excellence (NoE) (Design and Engineering of the Next generation Internet), Dec. 2003-Dec. 2006. Participation to activities :  
 JRA.2.2 : Traffic management in a multi-provider context  
 JRA.5.4 : Networks : optimization and control  
 JRA.5.5 : Numerical and analytic methodologies  
 JRA.6.2 : Payment and cost models for next Generation Internet
- Coordinator of AUCTIONS project of EUroNGI NoE, funded in 2005 on inter-domain auctions ; project in collaboration with the University of Versailles-St Quentin, Athens Univeristy of Economics and Business, the University of Rome 2 and the University of cantalabria.
- INRIA's 2005 research project with the USA : Hybrid Quasi-Monte Carlo methods and applications in finance and telecommunications, with Ball State University and Florida State University.
- Program FQNRT Québec/INRIA 2006 : on rare vent simulation with the University of Montréal and HEC Montréal.
- *Co-coordinator of the RARE ARC* : Rare event simulation.  
 INRIA's cooperative research action 2006-2007 with ASPI, MATHFI INRIA's project-teams, the CWI in the Netherlands, the University of Bamerd in Germany, EDF and the ENAC.
- *Member of the IFANY ARC* : Information Theory in telecommunication networks. An INRIA's cooperative research action 2006-2007 with INRIA MASETRO, HYPERCOM, TREC project-teams, EURECOM school, the EPFL (Lausanne) and the University of Cyprus.
- *Member of the ANR Télécommunications WINEM* : WIMAX Network Engineering and Multihoming.  
 ANR project 2007-2009, in cooperation with Motorola, the GET (INT and ENST Bretagne), MAESTRO project-team at INRIA Sophia-Antipolis, the University of Avignon, the Eurecom institute and France Telecom R&D.
- *ISAT bilateral collaboration with the University of Auckland (New-Zealand) 2006-2007.*  
 Work on pricing methods in a competitive market.
- INRIA Team-leader of the EuroFGI European Network of Excellence (NoE) (Design and Engineering of the Future generation Internet), a follow-up of EuroNGI, Dec. 2006-Dec. 2009.
- Member of CAP project (Competition Among Providers in the access network) within EuroFGI NoE, funded for a period of one year between 2007 and 2008, in collaboration with GET/ENST Bretagne, the University of Rome 2 and the University of Cantalabria.
- GDR ROTJER 2007-2008 : operations Research and Game Theory for communication networks.
- ECONTEL (EU COST Activity IS0605) : French national delegate and project coordinator.
- Head of associated-team MOCQUASIN : INRIA associated team with the University of Montreal. 2008-2010, extended to period 2011-2013.  
 Main topic : Monte Carlo and quasi-Monte Carlo simulation techniques. Application to rare event simulation. See [http://www.irisa.fr/dionysos/pages\\_perso/tuffin/MOCQUASIN/](http://www.irisa.fr/dionysos/pages_perso/tuffin/MOCQUASIN/)
- Team-leader for l'INRIA of European Network of Excellence (NoE) Euro NF (Design and Engineering of the Network of the Future) Jan. 2008- Dec. 2010.
- Member of PRECO project (Pricing and Regulation in Competitive Telecommunication Networks) within Euro-NF NoE unded for a period of one year between 2008 and 2009, in collaboration with TELECOM Bretagne and the University of Rome 2.

- Head of ANR CAPTURES project (Competition entre fournisseurs de telecommunication : rivalites et enjeux de gains) (2009-2012) in collaboration with France Telecom and TELECOM Bretagne.  
See <http://captures.inria.fr/>.
- Member of AMESA project (Analysis of MEchanisms for Sponsored search Auctions) within Euro-NF NoE funded for a period of one year between 2009 and 2010, in collaboration with Athens Univeristy of Economics and Business, ELECOM Bretagne, the University of Rome 2, and the CWI.
- *Coordinator of the MENEUR ARC* : Network Economics and Net Neutrality Modeling. INRIA's cooperative research action 2011-2012 with INRIA teams MAESTRO, MESCAL, Orange Labs, ALU-Bell Labs France, Telecom Bretagne, FTW (Autriche), Columbia University and Penn State University.
- Head of INNIS project (Impacts of Network Neutrality on the Internet Stakeholders) within Euro-NF NoE, funded between November 2011 and June 2012 on network neutrality ; project in collaboration with TELECOM Bretagne, the polytechnic University of Valencia (Spain), the University of Rome 2, and the Italian Data Protection Authority.
- Copilot of the research action within the Inria-Alcatel common lab on network economics. This action has been postponed, waiting for a reorganization at Alcatel on the topic.
- "International activity" action 2013 of the University of Rennes 1 on ads ranking for e-commerce and at search engines with their economic impact.
- Hosting the Inria's International Chair of Pierre L'Ecuyer. Nov. 2013- Oct. 2018.
- Inria leader of the Inria International Partnership with the Univerity of Montreal 2013-...
- Participation to the IPL (Inria Project Lab) BetterNet : An Observatory to Measure and Improve Internet Service Access from User Experience, 2016-2020.

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## Other invitations/visits (above projects not included)

- May- Dec. 1999 : 8 months at *Duke University*.  
Subject : Simulation methods for the analysis of stochastic Petri nets. Implementation in SPNP (*Stochastic Petri Net Package*).
- August 2000 : 3 weeks at *Duke University*.  
Subject : Continuation of 1999's work.
- October 2002 : 1 week at *UNAM, Mexico City*.  
Subject : Internet pricing methods.
- May 2003 : 8 days at the computer science and operations research department of the *University of Montreal*.  
Subject : quasi-Monte Carlo methods and applications.
- Dec. 2003 : 1 week at *Ball State University, Muncie, Indiana*.  
Subject : Mixed Monte Carlo/Quasi-Monte Carlo simulation.
- Jan. 2004 : 1 week at *Duke University*.  
Subject : Methods for reliability analysis and SPNP software package.
- November 2004 : 1 week at *Athens University of Economics and Business (AUEB)*.  
Subject : Second price auctions for bandwidth sharing.

- July 2005 : 8 days at the computer science and operations research department of the *University of Montreal*.  
Subject : Efficient simulation of Markov chains by randomized quasi-Monte Carlo methods.
- November 2007 : 8 days at the *University of Montreal*.  
Subject : Rare event simulation and zero-variance estimator.
- April 2009 : 1week at FTW (Vienna, Austria), to work on network security economics.
- November 2010 : 1 week at FTW (Vienna, Austria), to work on network security economics and QoE modeling.
- September 2015 : 1 weeks at the computer science and operations research department of the *University of Montreal*.  
Subject : Monte Carlo methods and applications.

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## Other invitations of peer researcher

- Christian Lécot, professor at the University of Savoie, 1 week, june 2001+ 1 semaine, juillet 2003.  
Subject : quasi-Monte Carlo methods.
- Elvio Accinelli, professor at Montevideo (Uruguay), 2 months, 2002.  
Subject : pricing telecommunication networks.
- Richard Marquez, University de Los Andes (Venezuela), 1 week, september 2003.  
Subject : control of TCP traffic by pricing.
- Pierre L'Ecuyer, professor at the University of Montréal, 15 days, March-April 2004.  
Subject : quasi-Monte Carlo methods for Markov chains simulation.
- Moshe Haviv, professor at the hebraic University of Jerusalem, 4 days, November 2004.  
Subject : Pricing and control in queues.
- Fernando Beltran, from the University of Auckland (New-Zealand), 20 days, June 2006.  
Subject : second price auctions with providers in competition.
- Pierre L'Ecuyer, professor at the University of Montréal, on a sabbatical year (mid july 2006-june 2007).  
Subject : quasi-Monte Carlo methods, and rare event simulation.
- Pieter de Boer, from the University of Twente, 2 months starting in February of 2007.  
Subject : rare event simulation.
- Peter Reichl, from FTW, Vienna, Austria, 1 month and a half, Summer 2008.  
Subjet : pricing communication networks.
- Peter Reichl, from FTW, Vienna, Austria, 1 month and a half, Summer 2009.  
Subjet : network security economics.
- Ad Ridder (Amsterdam), 1 week, December 2009.  
Subject : rare event simulation by importance sampling.
- Peter Reichl (FTW, Vienne, Autriche), 9 months in 2011 on the SISCO International Chair.  
Subjet : future telecommunications ecosystems.
- P. L'Ecuyer (University of Montréal), two weeks in March 2011.
- Z. Botev (University of Montréal), one week in March 2011.
- L. Guijarro (UP Valencia, Spain), June-July 2013, to work on network economics.

- P. L'Ecuyer : Chaire internationale Inria, 2013-2018.

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## Editorial activities/Organization of conferences

- Area Editor (simulation) : INFORMS Journal on Computing, since Jan. 2015.
- Associate Editor : INFORMS Journal on Computing, 2007- Dec. 2014.
- Associate Editor : Mathematical Methods of Operations Research, November 2008 - January 2015.
- Associate Editor : ACM Transactions on Modeling and Computer Simulation, since July 2009.
- General Chair : Fifth International Workshop on Advanced Internet Charging and QoS technologies (ICQT'06), "Performance has its price", June 27, 2006, St Malo, France.
- Organization of the International Workshop on Rare Event Simulation, Nice, May 2007.
- TPC co-chair : 1st International Conference on Network Control and Optimization (NET-COOP'07), June 5-7, Avignon, France.
- Member of the steering committee of NET-COOP, 2007-....
- Vice-General Chair and local arrangement chair of the Second International Conference on Performance Evaluation Methodologies and Tools (Valuetools'07), October, Nantes, France.
- Guest editor of a special issue of Performance Evaluation Journal for selected papers from valuetools'07.
- Co-organization of the 2nd ARC INRIA's National Days, Rennes, October 1-2, 2007.
- Local organization Chair, 5th International Conference on the Quantitative Evaluation of Systems (QEST'08), Saint-Malo, September 2008.
- Scientific Committee Chair, 7th International Workshop on Rare Event Simulation (RESIM'08), Rennes, September 2008.
- Guest editor of a special issue of ACM Transactions on Modeling And Computer Simulation on Rare Event Simulation (in preparation).
- Co-Chair : Sixth International Workshop on Advanced Internet Charging and QoS technologies (ICQT'09), May 15, 2009, Aachen, Germany.
- Co-guest editor of a special issue of Telecommunication Systems Journal on Socio-Economic Issues of Next Generation Networks, to appear at the beginning of 2011.
- TPC co-chair, NetGCoop 2011, Oct. 12-14, Paris.
- "Analysis" track co-coordinator. Winter Simulation Conference (WSC'12), Berlin, Germany, December 9-12, 2012.
- Co-chair : 8th International Workshop on Advanced Internet Charging and QoS technologies (ICQT'13), Zurich, Switzerland, 2013.
- "Analysis" track co-coordinator. Winter Simulation Conference (WSC'15), Huntington Beach, California, December 6-9, 2015.
- TPC co-chair : 10th International Conference Performance Evaluation Methodologies and Tools (Valuetools'16), September 2016, Taormina, Italy.
- Co-chair : International Workshop on Advanced Internet Charging and QoS technologies (ICQT'17), Tokyo, Japan, 2017.

- General Chair, Thirteenth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (MCQMC 2018), Rennes, France, 2018.
- Area chair for the area “Performance Evaluation, Control and Optimization” of ITC, 11-14 Sep, 2018 in Vienna, Austria.
- Track-Coordinator for Network and Communications mini-track for WSC2018

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## Program committees

- Fourth International Workshop on Advanced Internet Charging and QoS technologies (IC-QT'04), “QoS has its price”, September 29-October 1, 2004, Barcelona, Catalunya, Spain.
- “European Simulation and Modelling Conference” (ESM2005), October 24-26, 2005, University of Porto, Portugal.
- 5th IEEE International Symposium on Signal Processing and Information Technology (ISS-PIT'05), December 2005, Athens, Greece.
- Organizer of the invited session “Rare Events Simulation” at the Winter Simulation Conference, Orlando, USA, 2005.
- i-Society 2006, International Conference of Information Society, August 7-10 2006, Miami, USA.
- “European Simulation and Modelling Conference” (ESM2006), October 23-25, 2006, LAAS-CNRS Toulouse, France.
- 6th IEEE International Symposium on Signal Processing and Information Technology (ISS-PIT'06), August 2006, Vancouver, Canada.
- First International Conference on Performance Evaluation Methodologies and Tools (VALUE-TOOLS'06), October 11-13, 2006, Pisa, Italy.
- 4th Annual IEEE Consumer Communications and Networking Conference “Seamless Consumer Connectivity” (CCNC'07), January 11-13 2007, Las Vegas, Nevada.
- 16th IASTED International Conference on Applied Simulation and Modelling (ASM 2007), August 29-31, 2007, Palma de Mallorca, Spain.
- The 4th International Workshop on Grid Economics and Business Models (GECON 2007), August 28th, 2007, Rennes, France.
- “European Simulation and Modelling Conference” (ESM2007), October 22-24, 2007, St.Julians, Malta.
- 2nd International Conference on Performance Evaluation Methodologies and Tools (VALUE-TOOLS'07), October 23-25, 2007, Nantes, France.
- Co-organizer of the invited session “Game theory in communication networks” at the RoadeF Conference, Clermont Ferrand, February 25-27, 2008.
- 2nd IEEE International Workshop on Bandwidth on Demand (BoD 2008) April 11, 2008, Salvador da Bahia, Brazil.
- 4th EURO-NGI Conference on Next Generation Internet Networks Design and Engineering for Heterogeneity (NGI'08), April 28-30, Krakow, Poland.
- 9ème Atelier en Évaluation de Performances, 1-4 Juin 2008, Aussois, France.
- 8th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (MCQMC'08), July 7-11, 2008, Montréal, Canada.

- 17th International Conference on Computer Communications and Networks (ICCCN'08), August 4 - 7, 2008 St. Thomas U.S. Virgin Islands.
- The 5th International Workshop on Grid Economics and Business Models (GECON 2008), August 25-26, 2008, Las Palmas, Gran Canaria, Spain.
- 3rd International Conference on Performance Evaluation Methodologies and Tools (VALUE-TOOLS'08), October 13-18, 2008, Athens, Greece.
- "European Simulation and Modelling Conference" (ESM2008), October 27-28, 2008, Le Havre, France.
- 2nd IFAC Workshop on Dependable Control of Discrete Systems (DCDS'09), June 10-12, 2009, Bari, Italy.
- 5th EURO-NGI Conference on Next Generation Internet (NGI 2009). Aveiro, Portugal, June 22-24, 2009.
- The 6th International Workshop on Grid Economics and Business Models (GECON 2009), August 24, 2009, Delft, The Netherlands.
- 6th International Conference on the Quantitative Evaluation of Systems (QEST) 2009, September 2009, Budapest, Hungary.
- 21st International Teletraffic Congress (ITC 21), September 15-17, 2009, Paris, France.
- 3rd IFIP/IEEE International Workshop on Bandwidth on Demand and Federation Economics, April 23, 2010, Osaka, Japan.
- 6th Euro-NGI conference on Next Generation Internet Networks (NGI 2010), June 2010, Paris, France.
- 8th International Workshop on Rare Event Simulation (RESIM'10), June 21-22 2010, Cambridge, England.
- 22nd International Teletraffic Congress (ITC 22), September 2010, Amsterdam, The Netherlands.
- 3rd Workshop on Economic Traffic Management (ETM), September 2010, Amsterdam, The Netherlands.
- The 7th International Workshop on the Economics of Grids, Clouds, Systems, and Services (GECON 2010), August 30-31st, 2010, Ischia, Naples, Italy.
- 4th International Conference on Network Control and Optimization (NET-COOP'10), November 2010, Ghent, Belgium.
- Workshop on Performance Evaluation of Cognitive Radio Networks : from Theory to Reality (PE-CRN 2011), Valencia, Spain, May 13, 2011.
- IEEE International Conference on Communications (IEEE ICC 2011), June 5-9 2011, Kyoto, Japan.
- 7th Euro-NGI conference on Next Generation Internet Networks (NGI 2011), June 27-29 2011, Kaiserslautern, Germany.
- 1st International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH), Noordwijkerhout, The Netherlands, 29-31 July 2011.
- 20th IEEE International Conference on Computer Communication Networks (ICCCN 2011), Maui, Hawaii, August 1-4, 2011.
- 8th International Workshop on Economics of Grids, Clouds, Systems and Services (GECON'2011).

- 2nd International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH), Roma, Italy, 28-31 July 2012.
- 8th Euro-NF Conference on Next Generation Internet (NGI 2012), Blekinge Institute of Technology, Karlskrona, Sweden, June 25-27, 2012.
- First Workshop on Pricing and Incentive in Networks (W-PIN 2012), in conjunction with ACM SIGMETRICS/Performance 2012 , London, England, 11 June 2012.
- 9th International Workshop on Economics of Grids, Clouds, Systems and Services (GECON'2012), Berlin, Germany, 27-28 November 2012.
- Track on Simulation Methods and Tools, Winter Simulation Conference (WSC'12), Berlin, Germany, December 9-12, 2012.
- 9th International Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks (RAWNET/WNC3), Tsukuba Science City, Japan, May 13-17, 2013.
- 7th workshop on Simulation, Rimini, Italy, May 21-25, 2013.
- IFIP Networking 2013 Conference, Brooklyn, New York, USA, May 22-24, 2013.
- 27th ACM/IEEE/SCS Workshop on Principles of Advanced and Distributed Simulation (SIGSIM/PADS), 2013.
- Joint Workshop on Pricing and Incentives in Networks and Systems (W-PIN + NETECON 2013), in conjunction with ACM SIGMETRICS 2013 , Pittsburg, USA, June 21, 2013.
- 3rd International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH), Reikjavik, Iceland, 29-31 July 2013.
- 9th IMACS Seminar on Monte Carlo Methods, Annecy, France, July 15-19, 2013.
- 10th International Workshop on Economics of Grids, Clouds, Systems and Services (GECON'2013), Zaragoza, Spain September 18-20, 2013.
- 4th International Symposium on Information and Communication Technology (SoICT), Da-nang city, Vietnam, December 05-06, 2013.
- 3rd Workshop on Smart Data Pricing (SDP 2014), Workshop of IEEE INFOCOM 2014, Toronto, Canada, May 2, 2014.
- 2014 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (ACM SIGSIM PADS 2014) will take place in Denver, Colorado, USA on May 18-21, 2014.
- RAWNET/WNC3 2014 - 10th International Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks, Hammamet, Tunisia, June 2014.
- W-PIN+NetEcon 2014 : The joint Workshop on Pricing and Incentives in Networks and Systems, Austin, TX, USA, in conjunction with ACM SIGMETRICS.
- Workshop on QoE-centric Network and Application Management (QoENAM 2014), co-located with the IEEE ICC 2014 conference, Sydney, Australia, June 2014.
- 10eme Atelier de performance, Sophia Antipolis, France ; 11-13 Juin 2014.
- 10th International Workshop on Rare Event Simulation (RESIM 2014), August 27-29, 2014, Amsterdam, Netherlands.
- 4th International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH), Vienna, Austria, 2-4 September 2014.
- IEEE ICC 2015 - Communications Software, Services and Multimedia Applications Symposium, London, UK, June 8-12, 2015.

- NetEcon 2015 : the 10th Workshop on the Economics of Networks, Systems and Computation, Portland, Oregon, USA, in conjunction with ACM SIGMETRICS, June 2015.
- 2015 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (ACM SIGSIM PADS 2015) , the University of Westminster, London, UK, June 15-17, 2015.
- 4th Workshop on Smart Data Pricing (SDP 2015), Workshop of IEEE INFOCOM 2015, Hong Kong, May 1st, 2015.
- 10th IMACS Seminar on Monte Carlo Methods (MCM 2015), Linz, Austria, July 2015.
- 8th International Workshop on Simulation, Vienna, Austria, September 21-25, 2015.
- The International Conference on Wireless Networks and Mobile Communications (WINCOM'15). Marrakech, Morocco, October 20-23, 2015.
- 5th Workshop on Smart Data Pricing (SDP 2016), Workshop of IEEE INFOCOM 2016, San Francisco, USA, April 2016.
- IEEE ICC 2016 - Communications Software, Services and Multimedia Applications Symposium, 23-27 May 2016, Kuala Lumpur, Malaysia.
- 22nd Asia-Pacific Conference on Communications (APCC 2016), Yogyakarta, Indonesia on 25-27 August 2016.
- GECON2016 (13th International Conference on Economics of Grids, Clouds, Systems, and Services), 20-22 September 2016, Athens, Greece.
- The International Conference on Wireless Networks and Mobile Communications (WINCOM'16). Fez, Morocco, October 26-29, 2016.
- Globecom'16 - CSSMA (2016 IEEE Global Communications Conference : Communications Software, Services and Multimedia Apps), 4-8 December 2016, Washington VD, USA.
- 6th Workshop on Smart Data Pricing (SDP 2017), Workshop of IEEE INFOCOM 2017, Atlanta, GA, USA, May 2017.
- The Third International Symposium on Ubiquitous Networking (UNET 2017), Casablanca, Morocco, May 10-12, 2017.
- NetEcon 2017 : the 12th Workshop on the Economics of Networks, Systems and Computation, Cambridge, MA, USA, June 2017.
- 11th International Conference on Monte Carlo Methods and Application (MCM 2017), Montreal, Canada, July 3-7, 2017.
- 7th International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH), Madrid, Spain, 29-31 July 2017.
- 14th International Conference on Economics of Grids, Clouds, Systems & Services (GECON'2017), Biarritz-Anglet-Bayonne, France, Sept. 19-21, 2017.
- The International Conference on Wireless Networks and Mobile Communications (WINCOM'17). Rabbat, Morocco, November 1-4, 2017.
- IEEE Globecom 2017, Singapore, Dec. 4-8, 2017
- 11th EAI International Conference on Performance Evaluation Methodologies and Tools (ValueTools 2017), Venice, Italy, December 5-7, 2017
- Ninth International Workshop on Simulation, Barcelona, Spain, June 18-22, 2018
- The 4th International Symposium on Ubiquitous Networking (UNET 2018), Hammamet, Tunisia, May 03-05, 2018.

- IEEE International Conference on Communications, 20-24 May 2018, Kansas City, MO, USA
- IEEE 1st 5G World Forum, Santa Clara, July 9-11, 2018
- GECON 2018 - International Conference on Economics of Grids, Clouds, Software, and Services, Pisa, 18-20.Sept.2018
- NETGCOOP 2018 - International Conference on NETwork Games, COntrol and OPTimisation New York, November 14-16, 2018
- IFIP WG 7.3 Performance 2018, 36th International Symposium on Computer Performance, Modelling, Measurement and Evaluation, Toulouse, France, December 5-7, 2018
- ValueTools 2019, Palma de Mallorca, Spain, March 12-15, 2019
- First IEEE Workshop on the ECONomics of Fog, Edge, and Cloud Computing (ECOFEC 2019), in conjunction with IEEE INFOCOM 2019, Paris, France
- IEEE International Conference on Communications (IEEE ICC 2019), May 20-24 2019, Shanghai, China.
- 12th International Conference on Monte Carlo Methods and Application (MCM 2019), Sydney, Australia, July 8-12, 2019.
- 31th International Teletraffic Congress (ITC 31), 27-29 August 2019, Budapest, Hungary.

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## Referee activities

- Journals : *ACM MONET, ACM SIGCOMM Computer Communication Review, ACM ToMaCS, ACM TOMPECS, ACM ToMS, Acta Arithmetica, Annals of the Institute of Statistical Mathematics, Annals of Telecommunications, Applied Mathematical Modelling, Applied Stochastic Models in Business and Industry, Automatica, Comptes-Rendus de l'Académie des Sciences, Computational Statistics and Data Analysis, Computer Communications, Computer Networks, Computers & Operations Research, Concurrency and Computation : Practice and Experience, Discrete Event Dynamic Systems; Dynamic Games and Applications; Electronics and Telecommunications Research Institute (ETRI) Journal; Elsevier : Simulation Modelling, Practice and Theory; European Journal of Operational Research; Future Generation Computer Systems; IEEE JSAC, IEEE Network Magazine, IEEE/ACM transactions on Networking, IEEE Transactions on Automatic Control, IEEE Transactions on Computers, IEEE Transactions on Network and Service Management, IEEE Transactions on Reliability, IEEE Transactions on Software Engineering, IIE Transactions, Inform's Journal on Computing, International Journal of Information Technology & Decision Making, International Journal of Network Management, International Journal of Systems Science, International Transactions in Operational Research, Journal of Communications and Networks, Journal of Complexity, Journal of Parallel and Distributed Computing, Journal of Simulation, Mathematical and Computer Modelling, Operations Research, Operations Research Letters, Performance Evaluation, Queueing Systems : Theory and Applications (QUESTA), SIAM Journal on Control and Optimisation, Simulation : Transactions of the Society for Modeling and Simulation International, Stochastic Models, Technique et Science Informatique, Telecommunications Policy, Telecommunication Systems.*
- Conferences : *ACM Sigmetrics; Colloque Africain sur la Recherche en Informatique; IFIP Performance; International Computer Performance & Dependability Symposium; International Conference on Concurrency Theory; International Symposium on Algorithmic Game Theory;*

*International Teletraffic Congress; Numerical Solution of Markov Chains; Workshop on Multiaccess, Mobility and Teletraffic for Wireless Communications; IEEE Conference on Decision and Control; IEEE INFOCOM; IEEE Symposium on Computers and Communications; Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks; Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing; Performance Tools; Valuetools; Winter Simulation Conference.*

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## Softwares

- Library in C for generating low discrepancy sequences.
  - SPNP (*Stochastic Petri Net Package*) : package for the modeling and analysis using stochastic petri nets. This package is managed by Duke University on used on more than 200 sites (universities and companies).
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## Relationships with industry and other grants

- *Sofreten* : astudy fo highly reliable non-Markovian systems by simulation.
  - *Cril Telecom Software* : Covrage of CDMA algorithms in UMTS networks.
  - *DGA* : security of high-speed networks (in collaboration with AQL, ENST Bretagne, SAGEM).
  - *France Telecom* : Cifre contract (PhD thesis supervision) on pricing and revenue and resource management for an integrated telecommunication provider in the context of competition and convergence of services.
  - Participation to the research action *SELF OPTIMIZING WIRELESS NETWORKS*, in the framework of the joint laboratory INRIA- Alcatel Lucent, for a PhD thesis titled “Evolution towards auto-configuration of pricing and resource planning” (2008-...).
  - *Région Bretagne* : project ARED SIMERTEL (*rare event simulation with applications in telecommunications*) (2008-2011).
  - Project Inria-ALSTOM : Availability Prediction with Logistics, 2014.
  - Co-director of the common lab ALSTOM-Inria, 2014- ...
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## Annex activities

- Member of the committee for incentive actions at the scientific council (COST) of INRIA : 2005- end of 2009.
- Member of the committee for continuing education of IRISA from 2000 to 2006.
- Co-responsible for the networks and systems seminar at IRISA from september 2002 to 2005.
- Corresponding member for the international relationships of ARMORand Dionysos project-teams.
- Member of IRISA’s post-doc committee, 2007.
- Reviewer for the Telecom Institute (France), the Natural Sciences and Engineering Research Council of Canada (NSERC), the Netherlands Organisation for Scientific Research (NWO), the Swiss National Science Foundation (SNSF), the Austrian Science Fund (FWF), for the National Fund for Scientific & Technological Development (FONDECYT) in Chile, and for CIFRE contracts (France).

- Book reviews for Wiley.
- Substitute in the scientific committee of the “Pole Images et Reseaux” of Brittany region, Nov. 2009 - ...
- Member of the selection committee for an assistant professor at ENIB (Ecole Nationale d’Ingénieur de Brest), 2010.
- Member of INRIA Rennes’ post-doc committee, 2010.
- Reviewer for the French democratization of scientific research journal “Pour la Science”.
- Member of Inria Rennes’ PhD thesis selection committee, 2013.
- Member of Inria Rennes’ “Inria delegation” selection committee, 2014, 2016, 2017.
- Member of Inria-MITACS selection committee, 2015-2016-2017-2018.
- Member of Inria Rennes’ post-doc selection committee, 2017.
- Elected member of I-sim council of Informs society, 2018-2020.

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## Supervision of PhD thesis

- Patrick Maillé. *Application of game theory to Internet pricing*. Started 1/10/2002, defended in June 2005. Now assistant professor at Telecom Bretagne.
- Yezekael Hayel. *Sutdy of Internet pricing without resource reservation*. Started 1/10/2002, defended in November 2005. Now assistant professor at the University of Avignon.
- Arnaud Delenda. *Auction mechanisms for sharing Network resources*. Defended in June 2008. Now working for Hitvalue (<http://www.hitvalue.net/>)
- Hélène Le Cadre. *Tarifification et gestion du revenu et des ressources d’un opérateur intégré de télécommunication dans un contexte de concurrence et de convergence des services*. Started Dec. 2006, defended in November 2009. Now post-doc.
- Saggadi Samira. *rare event simulation with applications in telecommunications*. Started in November 2008, defended July 12, 2013.
- Hai Tran Hoang. *Evolution toward the auto-configuration of resources pricing and planning*. Defended in April 2012.
- Jean-Marc Vigne. *Analysing competition among providers in telecommunication networks*. Started the 01/10/2009, defense in April 2013 (but a no show). Co-supervised with Patrick Maillé (Telecom Bretagne).
- Ajit Rai. *Availability prediction with logistics*. In collaboration with ALSTOM. Started 05/2015. Defended 07/2018.
- Ximun Castoreo. *Measurements to check network neutrality*. Début 10/2018.

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## Membership of other PhD defense panels of judges

- V. Ramos. Robust and reliable transmission of multimédia on the Internet. University of Nice-Sophia-Antipolis, December 2004, examiner.
- F. Robledo. GRASP heuristics for Wide Area Network design. University of Rennes 1, February 2005, examiner.

- J. Nasreddine. Radio resource allocation in UMTS systems. University de Rennes 1, March 2005, examiner.
- Hamza Dahmouni. Reconnaissance des services, caractérisation du trafic et évaluation de performances dans les réseaux mobiles multiservices. ENST Bretagne, March 2007, examiner.
- Jérôme Lelong. Algorithmes stochastiques et options Parisiennes. Cermics, École Nationale des Ponts et Chaussées, september 2007, examiner.
- Nicolas Bonneau. Mécanismes multi-utilisateurs centralisés et décentralisés pour les communications sans fil. Université de Nice-Sophia-Antipolis, September 2007, rapporteur.
- Kamal Gakhar. Ingénierie de la QoS sur une plaque radio mixte IEEE 802.16/IEEE 802.11. ENST Bretagne, September 2007, examiner.
- Gary Hardy. Graphes stochastiques et Diagramme de Décision Binaire : Applications en fiabilité des réseaux. Université de Picardie, December 2007, rapporteur.
- Hélia Pouyllau. Algorithmes distribués pour la négociation de contrats de Qualité de Service dans les réseaux multi-domaines. Université de Rennes 1, December 2007, examiner.
- Matthias Roggendorf. Dynamic pricing of wireless network resources in a competitive provider setting. University of Auckland Business School, January 2008, external examiner.
- Dinesh Kumar. Analyse Stochastique de Réseaux sans Fil et Modélisation des Performances en temps réel dans les Réseaux Cablés. Université de Nice-Sophia-Antipolis, November 2008, rapporteur.
- Chahinez Hamlaoui. Modèles et algorithmes pour la gestion économique des ressources dans les réseaux interdomaines avec garanties de QoS. Université de Versailles-St Quentin, Février 2009, rapporteur.
- Gaoning He. A Game-Theoretical Approach to resource Allocation in Wireless Networks. Eurecom, January 2010, rapporteur.
- Octave Boussaton. Application de la théorie des jeux à l'optimisation du routage réseau - solutions algorithmique. LORIA, Février 2010, rapporteur.
- Fakhouri Hanane. Estimation du régime stationnaire de modèles markoviens complexes par l'algorithme de couplage depuis le passé. Université Cadi Ayyad, Marrakech, Maroc, 2010, rapporteur.
- Moazzam Islam Tiwana. Automated RRM Optimization of LTE networks using Statistical Learning. Institut National des Télécommunications et Université Pierre et Marie Curie - Paris 6, Novembre 2010, rapporteur.
- Elena Veronica Belmega. On resource allocation problems in distributed MIMO wireless networks. Université de Paris-Sud 11, December 2010, rapporteur.
- Pierre Coucheney. Optimisation et évaluation de performances dans les réseaux de communication sans fil : une approche par la théorie des jeux. Imag, Grenoble, August 2011, rapporteur.
- Cécile Mattrand. Approche probabiliste de la tolérance aux dommages appliquée au domaine aéronautique, Institut Français de Mécanique Avancée, Clermont-Ferrand, November 2011, rapporteur.
- Bahar Kaynar. Rare Event Simulation Techniques for Stochastic Design Problems in Markovian Setting. Vrije University, The Netherlands, January 2012.
- Lorenzo Maggi. Cooperative games for Markov decision processes with applications to telecommunications. Eurecom, October 2012.

- Pablo Gabriel Romero Rodriguez. Mathematical Analysis of Scheduling Policies in Peer-to-Peer Video Streaming Networks. Universidad de la Republica, Montevideo, Uruguay, November 2012, rapporteur.
- Isabel Amigo. Métrologie et Ingénierie du Trafic pour la QoS de bout-en-bout dans un réseau multi-domaine. Telecom Bretagne, Brest, July 2013, president.
- Pablo Sartor del Giudice. Propriétés et méthodes de calcul de la fiabilité diamètre-bornée. Université de la République Montevideo et Université de Rennes 1, Montevideo, Uruguay, Décembre 2013.
- Mariem Krichen, Modèle technico-économique pour le déploiement d'un réseau femto avec partage de ressources. Université de Versailles Saint Quentin, 2014, rapporteur.
- Luca Rose. Decisional Process for Ad Hoc Networks, SUPÉLEC, Gif-sur-Yvette, January 2014, rapporteur.
- Tim Bereton, Monte Carlo Methods for Complex Stochastic Models, The University of Queensland, Australia, 2014, rapporteur.
- Mohamed Lamine Lamali, Qualité de Service et calcul de chemins dans les réseaux inter-domaine et multicouches. Université de Versailles Saint Quentin, Septembre 2014, président.
- Vladimir Fux. Game-theory approaches to study and influence interactions among self-interested agents in wireless networks. TELECOM Bretagne, November 2014, president.
- Josu Doncel. Efficiency of Distributed Queueing Games and of Path Discovery Algorithms. LAAS-CNRS, March 2015.
- Christelle Vergé. Modèle d'îlots de particules et application en fiabilité. École Polytechnique, Juillet 2015, rapporteur.
- Jeanne Demgne. Modélisation d'actifs industriels pour l'optimisation robuste des stratégies de maintenance. Université de Pau et de l'Amour, Octobre 2015, rapporteur.
- Vincent Moutoussamy. Contributions à l'analyse de fiabilité structurale : prise en compte de contraintes de monotonie pour les modèles numériques. Université de Toulouse, Novembre 2015, rapporteur.
- Yangyang Chen. Performance Analysis of Mobile Relays for LTE. Telecom Bretagne, December 2015, president.
- Juan Eduardo Piccini. Static Reliability and Resilience in Dynamic Systems. University of the Republic, Montevideo, Uruguay, Mars 2016, rapporteur.
- Maïder Estécahandy. Méthodes accélérées de Monte-Carlo pour la simulation d'événements rares. Applications aux Réseaux de Petri. Université de Pau et de l'Amour, Mars 2016, rapporteur.
- Wenjing Shuai. Management of electric vehicle systems with self-interested actors. Telecom Bretagne, Sept. 2016, president.
- Simon Theissing. Supervision en Transport Multimodal. Université de Paris-Saclay, Dec. 2016, president.
- Graciela FERREIRA LEITES MUNDELL. Analysis and Optimization of Highly Reliable Systems. University of the Republic, Montevideo, Uruguay, 2018, rapporteur.
- Robert Salomone, Advances in Monte Carlo Methodology, The University of Queensland, Australia, 2018, rapporteur.

- Jean-Bernard Eytard, Une approche par la géométrie tropicale et la convexité discrète de la programmation bi-niveau : application à la tarification des données dans les réseaux mobiles de télécommunications, Ecole Polytechnique, Novembre 2018, president.

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## Member of habilitation defense panels of judges

- Sandrine Vaton. Mesure et analyse du trafic de réseaux : théorie et pratiques. Telecom Bretagne, Brest, July 2012.
- Pascal Redou. Modèles formels pour l'analyse et la simulation *in virtuo* de systèmes complexes d'inspiration biologique. Université de Bretagne Occidentale, Brest, 2015, rapporteur.
- P. Maillé. Insights from economic studies of telecommunication networks. Telecom Bretagne Rennes, Octobre 2015.

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## Supervision of post-doc

- Abhijit Datta Banik. Importance Splitting Simulation for Rare Event Analysis. From 15/12/2006 to 31/07/2007.
- Pierre Coucheney. Game-Theoretical Analysis of Interactions Between Internet Services Providers, Content Providers, and Customers. Impact on the Network Neutrality Debate. Du 01/09/2011 au 31/08/2012.

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## Supervision of Internships

- M. Logue, Master of Belfast University. Simulation of highly reliable systems by Monte Carlo with importance sampling, 1995.
- M. Ouarraou, master in applied mathematics, University of Rennes 1. Measurements of quality of service in the Internet, 2001, 50%.
- Y. Hayel. Internet Pricing models. Master of computer science, University of Rennes 1, 2002.
- M. Delignon. Security modeling with loss networks, master in applied mathematics, University of Rennes 1, 2002, 50%.
- P. Rodriguez, Reliability and pricing, Master of the Univeristy de la republica, Montevideo, 2003.
- M. Andriamady. Pricing ad hoc networks. Master of computer science, University of Rennes 1, 2004.
- N. El Khatib. Perturbed quasi-Monte Carlo methods. Master in applied mathematics, Université of Savoie, 2004.
- J. Hakyung. Pricing Wimax. PhD student, School of Computer Science and Engineering, Seoul National University, 2007.
- D. Lee Matias, Monte Carlo and quasi-Monte Carlo methods for estimating the reliability of static models. Master , Universidad Nacional de Cordoba, Argentina, 2007.
- K. Zhen. Pricing networks in a concurrential environment. Application to WIFI and WIMAX. PhD student in Computer Science, The University of Hong Kong, 2007.

- D. Ferre. Simulation d'événement rares. Mastère Recherche en Mathématiques, Université de Rennes 1, 2008.
- P. Pilotti. Competition on price and capacity among telecommunication service providers. Master, University of Rosario (Argentina), 2008.
- J.M. Vigne. Multihoming in a competitive telecommunication environment. Ingeneering school Telecom Bretagne, 2009.
- F. Boussion. Economics of content providers. Mastère Recherche Informatique, Université de Rennes 1 et ENS Cachan, 2011.
- Thuy Dung Mai, Economics of CDNs. M2RI, Université de Rennes 1, 2014.
- Joshua Peignier, Estelle Varloot. Game-theoretic tools to analyze classical vs collaborative economies, Project Master R& I, 2016-2017, 50%.

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## Teaching activity

- Co-chair of Networks and Systems track of Computer Science Master in Rennes : 2007-2008.
- Undergraduate level :
  - \* Arithmetic and polynoms (1×24 hours)
  - \* Real analysis (1×40 heures+ 1×36 hours)
  - \* real analysis for physics (1×33 hours)
  - \* Probability (3×30 hours)
  - \* Probability for biologists (3×12 hours)
  - \* Analysis (5×34 hours).
  - \* Class on networking, 3rd year in computer science (1×8 hours).
  - \* Graphs at the engineering school ESIR (1×12 hours).
  - \* Probability and Statistics, University of Science and Technology of Hanoi (1×40 hours).
- Graduate level :
  - \* Statistics and data analysis, Bacchelor in Mathematics (1×15 hours)
  - \* SAS software, Bacchelor in Mathematics (1×15 hours)
  - \* Class of queuing systems, DIIC (engineering degree) (1×16 hours)
  - \* Class of Stock management, MIAGE-IUP2 degree(2×16 hours)
  - \* Class of queuing systems (computer science master) (7×18 hours)
  - \* Class of probability and simulation (computer science master) (8×18 hours)
  - \* Class of applied probability and statistics (computer science master, 1st year) (2×12 hours)
  - \* Class of Performance Evaluation (computer science master, 2nd year) (9×6 hours)
  - \* Class of Game Theory applications (computer science master, 2nd year) (1×10 heures)
- Class at CNAM, mathematics for computer science (3×21 hours)
- Class at CNAM, mathematics for computer science, by Internet (4 years)
- PhD class : "Introduction to Monte Carlo simulation" (1×12 hours)
- PhD class : "Network economics" (1×6 hours; 3 hours by myself).

- Master and PhD at NTNU (Trondheim, Norway) : 25 hours intensive course on Game Theory and Network Economics (2015)
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## Misc.

- Former Hand Ball (10 years), referee (6 years), coach (4 years).
- Cycling : “cyclosporitif” since 2001 and in official competition since 2012 (1 podium in 2012, 14 top-10 finishes and 2 podiums in 2013, 12 top-10 finishes and 3 podiums in 2014, , 2 top-10 in 2015, 1 win+ 2 podiums and total 7 Top-10 in 2016, and up to now 1 win + 2 podiums and total 5 top-10 in 2017).
- Treasurer of the “cyclo club Gévezé ” since 2006, member of the Olympique Club Cycliste Cessonnois committee in 2013-2014, and of the AS Romillé Cyclisme since 2016.