
Curriculum vitae – Michel Mandjes

Personal information

Name Mandjes, Michael Robertus Hendrikus (Michel)
Address Grevelingenstraat 4 II r, 1078 KN Amsterdam, The Netherlands
Birth February 14, 1970, in Zaandam, The Netherlands
Civil status Married, father of a daughter

Education:

1982-1988 Gymnasium β ,
Triniteitslyceum, Haarlem, The Netherlands.
1988-1993 M.Sc. degree in Econometrics (cum laude),
Vrije Universiteit, Amsterdam, The Netherlands.
1989-1993 M.Sc. degree in Mathematics (cum laude),
Vrije Universiteit, Amsterdam, The Netherlands.
1993-1996 Ph. D. degree in Operations Research,
Vrije Universiteit, Amsterdam, The Netherlands.

Working experience:

1990-1992 Vrije Universiteit, Amsterdam, The Netherlands,
Department of Econometrics:
Student assistant.
1993-1996 Vrije Universiteit, Amsterdam, The Netherlands,
Department of Econometrics:
Research assistant;
taught courses in Statistics, Calculus, and Stochastic modelling.
1996-1998 KPN Research, Leidschendam, The Netherlands,
Department of Planning, Performance, and Reliability:
Member of technical staff.
1999-2001 Bell Laboratories/Lucent Technologies, Murray Hill NJ, United States,
Mathematical Sciences Research Center:
Member of technical staff.
2000-2004 University of Twente, The Netherlands,
Faculty of Mathematical Sciences:
Full professor of Stochastic Operations Research.
2000-2006 Center for Mathematics and Computer Science, Amsterdam, The Netherlands,
Department of Probability, Networks, and Algorithms:
Senior researcher; department head (theme leader) PNA2.
2004-.... University of Amsterdam, The Netherlands,
Korteweg-de Vries Institute for mathematics:
Full professor of Applied Probability (from 2006 full-time).

Address

E-mail `michel@cwi.nl`; `m.r.h.mandjes@uva.nl`
http: `http://www.cwi.nl/~michel`
Address University of Amsterdam (UvA),
 Korteweg-de Vries Institute for Mathematics,
 Plantage Muidergracht 24,
 1018 TV Amsterdam,
 The Netherlands.
Phone +31 20 525 5164.
Fax +31 20 525 5101.

Research interests

- *Stochastic processes and queues.* Gaussian processes - Lévy processes - asymptotic techniques - large deviations, large-buffer asymptotics, many-sources asymptotics - fluid queues.
- *Queueing models for telecommunications.* Models for wireline networks, IP - Feedback queues, TCP - Markov fluid models - long-range dependence, heavy tails, fractional Brownian motion, Gaussian traffic - fast simulation, rare events, importance sampling, exponential change of measure - loss networks - wireless networks, GSM, UMTS, ad hoc networks - queues under various scheduling disciplines - diffusion approximations.
- *Traffic management.* Quality of Service - service differentiation, generalized processor sharing, diffserv - traffic management, resource allocation, admission control.
- *Traffic analysis.* Traffic measurements - Gaussian modeling, fractional Brownian motion - model selection - anomaly detection - bandwidth provisioning, dimensioning - measurement-based algorithms.
- *Network economics.* Charging and pricing in communication networks - bandwidth brokering - cost allocation models, resource allocation - congestion cost - Paris metro pricing.
- *Financial models.* Insurance models - risk analysis - ruin probabilities.
- *Service systems.* Performance and optimization of service systems.

Scientific activities

Michel Mandjes has currently collaborations with, among others,

- Lars Norvang Andersen (*Aarhus University*, reflected Lévy processes),
- Nick Bambos (*Stanford University*, rate-based control algorithms),
- Hans van den Berg (*TNO ICT and University of Twente*, traffic management, admission control),
- Sem Borst (*Eindhoven University of Technology and Bell Labs*, queues with heavy-tailed input, generalized processor sharing),
- Onno Boxma (*Eindhoven University of Technology*, queues with Lévy-input),
- Krzysztof Dębicki (*University of Wrocław*, Gaussian processes),
- Peter Glynn (*Stanford University*, correlation structure reflected fBm),

- Boudewijn Haverkort (*University of Twente*, TCP modeling, Petri nets),
- Offer Kella (*Hebrew University, Jerusalem*, Lévy processes),
- Jeong Han Kim (*Microsoft Research*, large deviations techniques),
- Krishnan Kumaran (*Exxon-Mobil Research*, traffic management, admission control, QoS differentiation),
- Pasi Lassila (*Helsinki University of Technology*, TCP modeling),
- Petteri Mannersalo (*VTT*, sample-path large deviations, Gaussian processes),
- Debasis Mitra (*Bell Labs*, Markov fluid models, network economics, bandwidth brokering),
- Ilkka Norros (*VTT*, sample-path large deviations, Gaussian processes),
- Sindo Núñez-Queija (*CWI Amsterdam and TNO ICT*, network economics),
- Teun Ott (*Rutgers*, correlation structure reflected Lévy),
- Aiko Pras (*University of Twente*, network measurements),
- Ad Ridder (*Vrije Universiteit Amsterdam*, large deviations techniques, fast simulation),
- Iraj Saniee (*Bell Labs*, traffic management, network economics),
- Werner Scheinhardt (*University of Twente*, Markov fluid models, feedback),
- Peter Spreij (*University of Amsterdam*, stochastic processes)
- Aleksandr Stolyar (*Bell Labs*, traffic management, queueing),
- Judith Timmer (*University of Twente*, network economics),
- Alan Weiss (*MathWorks*, large deviations techniques),
- Bert Zwart (*CWI*, heavy tails, processor sharing).

A list of miscellaneous international scientific activities:

- Author of book ‘Large deviations for Gaussian Queues’ (Wiley, 2007).
- Associate editor of the journals *Stochastic Models* and *Queueing Systems*.
- Program Committee Chair (with O.J. Boxma) of the INFORMS Applied Probability conference (Eindhoven, the Netherlands, 2007).

Member of the International Technical Programme Committee of the International Teletraffic Congress 17 (Salvador de Bahia, Brazil, 2001), 18 (Berlin, Germany, 2003), 19 (Beijing, China, 2005), and 20 (Ottawa, Canada, 2007).

Organizer of a session on Gaussian queues at INFORMS Applied Probability (Ottawa, Canada, 2005).

Member of the Technical Programme Committee of ACM Sigmetrics/Performance (St. Malo, France, 2006).

Member of the Technical Programme Committee of Value Tools (Pisa, Italy, 2006).

Member of the Technical Programme Committee of the European Meeting of Statisticians (EMS; Oslo, Norway, 2005); organizer of a special session on Applied Probability and Queues.

Member of the Technical Programme Committee of ITCOM, Conference on Internet Performance and Control (Orlando, FL, USA, 2001-2004).

Member of the Technical Programme Committee of ITC Specialist Seminar (Antwerp, Belgium, 2004).

Member of the Technical Programme Committee of the 1st EURO-NGI Conference (Rome, Italy, 2005), the 2nd EURO-NGI Conference (Valencia, Spain, 2006), and the 3rd EURO-NGI Conference (Trondheim, Norway, 2007).

Member of the Technical Programme Committee of NET-COOP (Avignon, France, 2007).

Member of the Technical Programme Committee of RESIM 2008 (Rennes, France, 2008).

Member of the Technical Programme Committee of ITC Specialist Seminar (Berlin, Germany, 2008).

Member of the Technical Programme Committee of ACM Sigmetrics Workshop on MATHematical performance Modeling and Analysis (MAMA 2007 and 2008).

- Thesis supervisor of
 - N.K. Boots (Vrije Universiteit Amsterdam, with A.A.N. Ridder and H.C. Tijms; February 5, 2002),
 - N.D. van Foreest (University of Twente, with W.R.W. Scheinhardt; December 17, 2004),
 - A.B. Dieker (CWI Amsterdam; March 9, 2006; *with honours*),
 - R. van de Meent (University of Twente, with J.L. van den Berg, A. Pras, and L.J.M. Nieuwenhuis; March 24, 2006),
 - P.M.D. Lieshout (CWI Amsterdam, with S.C. Borst; September 5, 2008),
 - R. Malhotra (University of Twente and Alcatel-Lucent, with J.L. van den Berg; October 31, 2008),
 - F. Roijers (University of Amsterdam and TNO Telecom, with J.L. van den Berg; February 11, 2009),
 - D.I. Miretskiy (University of Twente, with W.R.W. Scheinhardt),
 - V.J.G. Leijdekker (University of Amsterdam and ABN-AMRO, with P.J.C. Spreij),
 - A. Es-Saghouani (University of Amsterdam, with P.J.C. Spreij),
 - B.P.H. Kemper (University of Amsterdam and IBIS UvA BV, with J. de Mast),
 - J.D. Ivanovs (University of Amsterdam and EURANDOM, with O.J. Boxma),
 - S. Möring (University of Amsterdam, with A. Belloum),
 - K. Kosinski (University of Amsterdam and EURANDOM, with O.J. Boxma).
- Thesis committee member of
 - P.-T. de Boer (University of Twente; supervisors: I. Niemegeers and V.F. Nicola),
 - Q. Deng (Eindhoven University of Technology; supervisor: O.J. Boxma),
 - P. Lassila (Helsinki University of Technology; supervisor: J. Virtamo),
 - R. Litjens, M.Sc. (University of Twente; supervisors: W.H.M. Zijm and R.J. Boucherie),

- M.F.M. Nuijens (Universiteit van Amsterdam; supervisors: M.S. Keane and A.A. Balkema),
 - H. Gautama (Technical University Delft; supervisors: A. van Gemund and H. Sips),
 - R. Groenevelt (Université de Nice/Sophia Antipolis; supervisor: P. Nain),
 - T.J.J. Denteneer (Eindhoven University of Technology; supervisor: O.J. Boxma),
 - R. Bekker (Eindhoven University of Technology; supervisors: O.J. Boxma and S.C. Borst),
 - L. Leskelä (Helsinki University of Technology; supervisors: I. Norros and E. Valkeila),
 - M.B. Vermaat (University of Amsterdam; supervisor: R.J.M.M. Does),
 - P. Mokveld (University of Amsterdam; supervisor: C. Klaassen),
 - H. de Koning (University of Amsterdam; supervisor: R.J.M.M. Does),
 - P. Zaręba (Vrije Universiteit Amsterdam; supervisors: A.W. van der Vaart, K.O. Dzharidze, and J.H. van Zanten),
 - T. Zaburnenko (University of Twente; supervisors: B.R.H.M. Haverkort and P.-T. de Boer),
 - S. Gugushvili (University of Amsterdam; supervisors: C.A.J. Klaassen, P.J.C. Spreij, and A.J. van Es),
 - M. Raiz (University of Amsterdam; supervisor: R.J.M.M. Does),
 - R. Haijema (University of Amsterdam; supervisors: N.M. van Dijk and J. van der Wal),
 - R. Egorova (Eindhoven University of Technology; supervisors A.P. Zwart and S.C. Borst).
- Leader of Work Package 5.2 (jointly with O.J. Boxma) Network of Excellence EURO-NGI: 2003–2006.
- Leader of Work Package 5 Network of Excellence EURO-NGI: 2005–2006.
- Organizer of the workshop ‘Rare events in communication networks’ (jointly with O.J. Boxma), within the framework of EURO-NGI. Eindhoven, the Netherlands, 2005.
 - Organizer of the 2nd Korean-Dutch workshop on queueing and its applications in telecommunications (jointly with H.C. Tijms). Amsterdam, the Netherlands, 2006.
 - Organizer of the workshop ‘Stochastic performance models for resource allocation in communication systems’ (jointly with R.D. van der Mei and R. Núñez-Queija), within the framework of EURO-NGI. Amsterdam, the Netherlands, 2006.
 - Organizer of a workshop at Oberwolfach on Stochastic Networks (jointly with S. Foss, G. Last, and B. Prabhakar). Oberwolfach, Germany, 2010.
 - Advisor EURANDOM, Eindhoven, the Netherlands; theme Queueing and Performance Evaluation.
 - Guest Researcher CWI (PNA2).
 - Referee for ACM Transactions on Modeling and Computer Simulation, Advances in Applied Probability, Annals of Applied Probability, Annals of Operations Research, Computer Networks, IEEE Infocom, IEEE/ACM Transactions on Networking, IEEE Communications Letters, ITC-19, Journal of Applied Probability, Mathematical Methods in Operations Research, Mathematics of Operations Research, Operations Research, Methodology and Computing in Applied Probability, Performance Evaluation, Probability in the Engineering and Informational Sciences, Queueing Systems, Stochastic Models, Telecommunication Systems.

A list of miscellaneous national scientific activities:

- Member project steering committee EQUANET (funded by Dutch Ministry of Economic Affairs through its agency SENTER/Novem; partners: CWI, Lucent Technologies, TNO Telecom, TU/e, UT; 2002–2005).
- Member Evaluation Committee VIDI awards, Netherlands Organization for Scientific Research *NWO* (2005, 2006, 2007).
- Member board Stieltjes Institute (representing CWI), and project leader Stieltjes programme 4.2 *Stochastic Operations Research* (jointly with G.M. Koole): 2004–2006.
- Member advisory group *Voorverkenning ICT*, Royal Dutch Academy of Sciences *KNAW* (2004).
- ‘Commissaris’ (member of the supervisory board) of IBIS UvA BV.

Grants & projects:

- NWO (Netherlands Organization for Scientific Research):
 - 2001: EQUIP (CWI; two PhD students, with V.F. Nicola); rare-event simulation.
 - 2005: LOGICA (UvA; one PhD student, with P.J.C. Spreij); Gaussian queues.
 - 2006: QNIS (CWI; one post-doc, with R.J. Boucherie, O.J. Boxma, R.D. van der Mei); Queueing Networks of Interacting Servers.
 - 2008: SQALP (UvA/EURANDOM; one PhD student, with O.J. Boxma); Lévy-driven queues.
- SENTER/Novem (Dutch Ministry of Economic Affairs):
 - 2003: EQUANET (CWI; with Lucent Technologies, TNO ICT, University of Twente, Eindhoven University of Technology); end-to-end QoS in IP networks.
- ICES-KIS:
 - 2004: BRICKS (CWI; with several partners from industry and academia); resource allocation, processor sharing, fluid queues.
- Telematica Instituut:
 - 2002: M2C-QoS (CWI; with R. van de Meent and A. Pras); traffic measurements, provisioning.
- Industry:
 - 2001: consultancy project at UUNET/WorldCom (CWI; provisioning IP links).
 - 2005: Ph.D. project V.J.G. Leijdekker at ABN AMRO (UvA; with P.J.C. Spreij).
 - 2006: consultancy project at EMC (UvA; with P.M.D. Lieshout).

Visits:

- 2002: INRIA-Rocquencourt (Ph. Robert);

- 2002: Microsoft Research, Cambridge (P. Key, L. Massoulié);
- 2002: VTT, Espoo, Finland (I. Norros, P. Mannersalo);
- 2003, 2007: the University of Wrocław (K. Dębicki, T. Rolski);
- 2004: invited guest at the special program on Applied Probability and Performance Evaluation at the Mittag-Leffler institute, fall 2004 (I. Kaj);
- 2006: the University of Melbourne (P. Taylor);
- 2007: Universiteit van Stellenbosch (A.E. Krzesinski);
- 2008: sabbatical at Stanford University (P. Glynn, P. Prabhakar).

Invited talks:

- 1997: Invited talk Workshop on Stochastic Networks, Cambridge, UK (“Optimal trajectory to overflow in a queue fed by a large number of sources”; organizers: R.J. Gibbens and F.P. Kelly)
- 1998: Invited talk INRIA Queueing Seminar (projet MISTRAL), Sophia-Antipolis, France (“Optimal trajectory to overflow in a queue fed by a large number of sources”; organizer: Ph. Nain)
- 1998: Invited lecture Nederlands Wiskundig Congres, Enschede, the Netherlands (“Connection Admission Control for integrated real-time and non-real-time traffic in ATM networks”)
- 1999: Plenary talk ITC (International Teletraffic Congress) 16, Edinburgh, UK (“Aspects of pricing in an integrated services network”)
- 1999: Invited talk Workshop on Internet Quality Economics, MIT, Cambridge, MA, USA (“Pricing of Variable Bit Rate Services Based on Trace-Based Leaky Bucket Parameter Estimation”; organizer: J. Bailey)
- 2000: Invited talk Workshop on Stochastic Networks, Cambridge, UK (“An analysis of the phase transition phenomenon in packet networks”; organizers: R.J. Gibbens and F.P. Kelly)
- 2001: Invited talk on Stochastic Networks at the Conference on Stochastic Processes and their Applications (Bernoulli Society), 27, Cambridge, UK (“An analysis of the phase transition phenomenon in packet networks”; organizers: J. Norris, F.P. Kelly *et al.*)
- 2002: Invited talk Microsoft Research, seminar on networking, Cambridge, UK (“Models for TCP performance analysis”; organizer: P. Key)
- 2002: Invited talk INRIA Queueing Seminar (projet RAP), Rocquencourt, France (“Feedback fluid queues”; organizer: Ph. Robert)
- 2002: Invited talk LMS/ICMS meeting on Modern Problems in Applied Probability, Edinburgh, UK (“Traffic with an FBM limit: convergence of the workload process”; organizers: S. Foss and S. Zachary)
- 2003: Invited talk Benelux workshop on Performance Analysis of Communication Systems, Eindhoven, the Netherlands (“Queues with Gaussian inputs: modeling of traffic correlations, quality of service, and network design”; organizers: C. Blondia, S. Borst, and O. Boxma)

- 2003: Invited talk Meeting on Applied Probability and Advanced Communication Networks, Bedlewo, Poland (“Sample-path large deviations for tandem and priority queues with many Gaussian inputs”; organizers: T. Rolski and R. Szekli)
- 2004: Invited talk Workshop on Quantitative Models for Production and Communication Networks, Eindhoven, the Netherlands (“Large Deviations of Sojourn Times in PS Queues”; organizers: T. de Kok and O. Boxma)
- 2004: Invited talk Workshop “A Mathematical Perspective on Queueing and Teletraffic Modeling”, Institut Mittag-Leffler, the Royal Swedish Academy of Sciences, Djursholm, Sweden (“Processor sharing queues with light-tailed input”; organizer: I. Kaj)
- 2005: Invited talk Conference European Meeting of Statisticians (EMS 2005), Oslo, Norway (“Large deviations of infinite intersections”; organizers: A. van der Vaart *et al.*)
- 2006: Invited talk Postgraduate Workshop on Stochastic Processes, Melbourne, Australia (“Large deviations of Gaussian queues”; organizers: A. Motyer *et al.*)
- 2006: Invited talk Workshop “New Directions in Applied Probability: Stochastic Networks and beyond”, Edinburgh, UK (“A fluid system with coupled input and output, and its application to bottlenecks in ad hoc networks”; organizers: S. Foss, T. Konstantopoulos, and S. Zachary)
- 2007: Invited talk Workshop on Rare Event Simulation, Nice, France (“Reflected fractional Brownian motion: Fast simulation, convergence to stationarity, and correlation structure”; organizers: B. Tuffin and G. Rubino)
- 2007: Invited talk Meeting on Stochastic Networks, Bedlewo, Poland (“Reflected fractional Brownian motion: convergence to stationarity and correlation structure”; organizers: T. Rolski, Z. Palmowski, K. Dębicki, and R. Szekli)
- 2007: Key note London Mathematical Society; Workshop on Mathematical Foundations for the Internet, London, UK (“Gaussian models for the Internet”; organizers: R. Gibbens and P. Key)
- 2008: Invited talk ICME seminar, Stanford, US (“Convergence to stationarity of reflected fractional Brownian motion”; organizer: P. Glynn)
- 2008: Invited talk OR seminar, Stanford, US (“Convergence to stationarity of reflected fractional Brownian motion”; organizer: R. Johari)
- 2008: Invited talk Stochastic Networks '08, Paris, France (“Convergence to stationarity of reflected fractional Brownian motion”; organizers: F. Baccelli and J. Mairesse)
- 2008: Invited talk OR seminar, Stanford, US (“Transient analysis of reflected Lévy processes”; organizer: R. Johari)
- 2008: Invited talk networking/communications/signal processing seminar, Berkeley, US (“Research dimensioning through buffer sampling”; organizer: V. Anantharam)
- 2008: Invited talk workshop on Stochastic Networks, University of Wrocław (“Transient analysis of reflected Lévy processes”; organizers: K. Dębicki, Z. Palmowski, R. Szekli, T. Rolski)
- 2008: Key note workshop Young European Queueing Theorists, Eindhoven, the Netherlands (“Transient analysis of reflected Lévy processes”; organizers: M. Jonkheere and S. Shneer)

Awards:

- 1994: Master thesis *Large deviations: theoretical results and queueing applications*, written under supervision of H.C. Tijms, A.A.N. Ridder, and P.J. Holeyijn, was awarded the Dutch Operations Research Prize (NGB – Netherlands Operations Research Association), and runner up in the VVS competition (VVS – Dutch Association for Statistics);
- 1999: Marcel F. Neuts award for the paper ‘Rare event analysis of the state frequencies of a large number of Markov chains’, for the best paper in the journal *Stochastic Models* in 1999.
- 2001: Burgen Scholarship of Academia Europaea.
- 2002: nomination for best-paper award Infocom 2002 for the paper ‘Generalized Processor Sharing queues with heterogeneous traffic classes’, coauthored by S. Borst and M. van Uitert.

Thesis

M. Mandjes (1996). *Rare event analysis of communication networks*. Vrije Universiteit Amsterdam.

Book

M. Mandjes. *Large deviations for Gaussian queues*. Wiley, Chichester, UK, 2007.

Refereed publications

1993-2000:

- (1) M. Mandjes (1993). Large Deviations and Queueing Applications. *Operations Research Proceedings DGOR/NSOR, Amsterdam, the Netherlands*, pp. 35-41
- (2) M. Mandjes and A. Ridder (1995). Finding the conjugate of Markov fluid processes. *Probability in the Engineering and Informational Sciences*, Vol. 9, pp. 297-315.
- (3) M. Mandjes (1995). Overflow asymptotics for large communication systems with general Markov fluid sources. *Probability in the Engineering and Informational Sciences*, Vol. 10, pp. 501-518.
- (4) M. Mandjes (1996). Rare event analysis of batch-arrival queues. *Telecommunication Systems*, Vol. 6, pp. 161-180.
- (5) M. Mandjes (1997). Fast simulation of blocking probabilities in loss networks. *European Journal of Operational Research*, Vol. 101, pp. 393-405.
- (6) M. Mandjes and H. van den Berg (1997). Some new techniques for resource allocation in single- and multi-link ATM systems. *Proceedings ITC 15*, pp. 1257-1268.
- (7) P. Tran-Gia and M. Mandjes (1997). Modeling of customer retrial phenomenon in cellular mobile networks. *IEEE Journal on Selected Areas in Communications*, Vol. 15, pp. 1406-1414.
- (8) K. van der Wal, M. Mandjes, and H. Bastiaansen (1997). Delay Performance of the New Internet Service with Guaranteed QoS compared to ATM. *Proceedings IEEE ATM Workshop, Lisbon, Portugal*.
- (9) K. van der Wal, M. Mandjes, and H. Bastiaansen (1997). Delay performance of the new Internet service with guaranteed QoS. *Proceedings ISS Conference, Toronto, Canada*, pp. 135-148.
- (10) K. van der Wal, M. Mandjes, and H. Bastiaansen (1997). Delay Performance Analysis of the New Internet Services with Guaranteed QoS. *Proceedings of the IEEE*, Vol. 85, pp. 1947-1957.
- (11) M. Mandjes (1997). Performance of queues with 'worst case input'. *CWI Tract*, Vol. 122, pp. 171-178.
- (12) K. van der Wal, M. Mandjes, and H. Bastiaansen (1997). Delay Performance Analysis of the New Internet Services with Guaranteed QoS. *The Internet and Telecommunications: Architectures, Technologies, and Business Developments*. Ed. L. Farnsworth.
- (13) R. Boucherie and M. Mandjes (1998). Computation of performance measures for product form cellular mobile communication networks. *Telecommunication Systems*, Vol. 10, pp. 321-354.
- (14) M. Mandjes (1998). Asymptotically optimal importance sampling for tandem queues with Markov fluid input. *AEÜ International Journal on Electronics and Communications*, Vol. 52, pp. 152-161.

- (15) M. Mandjes and A. Ridder (1999). Optimal trajectory to overflow in a queue fed by a large number of sources. *Queueing Systems*, Vol. 31, pp. 137-170.
- (16) R. Núñez-Queija, H. van den Berg, and M. Mandjes (1999). Performance evaluation of strategies for integration of elastic and stream flows. *Proceedings ITC 16*, pp. 1039-1050.
- (17) H. van den Berg and M. Mandjes (1999). CAC for integrated real-time and non-real-time traffic. *Nieuw Archief voor de Wiskunde*, Series 4, Vol. 17, pp. 125-133.
- (18) M. Mandjes and N. van Foreest (1999). Aspects of pricing in an integrated services network. *Proceedings ITC 16*, pp. 1331-1340.
- (19) M. Mandjes (1999). Rare event analysis of the state frequencies of a large number of Markov chains. *Stochastic Models*, Vol. 15, pp. 577-592.
- (20) H. Bastiaansen, K. van der Wal, R. Kooij, and M. Mandjes (1999). How real-time can real-time be in a large-scale IP network? End-to-end delay assessment. *Proceedings IEEE RTAS Workshop on QoS for real-time Internet Applications*, pp. 77-84.
- (21) M. Mandjes, K. van der Wal, R. Kooij, and H. Bastiaansen (1999). End-to-end delay models for interactive services on a large-scale IP network. *Proceedings 7th IFIP workshop modeling and evaluation of ATM/IP networks*.
- (22) S. Verwijmeren, M. Mandjes, and R. Boucherie (2000). Asymptotic evaluation of blocking probabilities in a hierarchical cellular mobile network. *Probability in the Engineering and Informational Sciences*, Vol. 14, pp. 81-99.
- (23) M. Mandjes and M. van Uitert (2000). Transient analysis of traffic generated by bursty sources, and its application to measurement-based admission control. *Telecommunication Systems*, Vol. 15, pp. 273-293.
- (24) M. Mandjes and J.H. Kim (2000). Large deviations for small buffers: an insensitivity result. *Proceedings 37th Allerton Conference*, pp. 1105-1112.
- (25) M. Mandjes and S. Borst (2000). Overflow behavior in queues with many long-tailed inputs. *Advances in Applied Probability*, Vol. 32, pp. 1150-1167.
- (26) M. Mandjes, I. Saniee, and A. Stolyar (2000). Load characterization, overload prediction, and load anomaly detection for voice over IP traffic. *Proceedings 37th Allerton Conference*, pp. 567-576.
- 2001:
- (27) M. Mandjes and J.H. Kim (2001). Large deviations for small buffers: an insensitivity result. *Queueing Systems*, Vol. 37, pp. 349-362.
- (28) M. Mandjes and J.H. Kim (2001). An analysis of the phase transition phenomenon in packet networks. *Advances in Applied Probability*, Vol. 33, pp. 360-280.
- (29) K. Kumaran, M. Mandjes, D. Mitra, and I. Saniee (2001). Resource usage and charging in a multi-service multi-QoS packet network. *Proceedings MIT/Tufts Workshop on Internet Service Qualities and Economics*, Cambridge, US.
- (30) H. van den Berg and M. Mandjes (2001). Admission control in integrated networks: overview and evaluation. *Proceedings 8th International Conference on Telecommunication Systems*, Nashville, US, pp. 132-151.

- (31) K. Kumaran and M. Mandjes (2001). The buffer-bandwidth trade-off curve is convex. *Queueing Systems*, Vol. 38, pp. 471-483.
- (32) M. Mandjes (2001). A note on queues with M/G/ ∞ input. *Operations Research Letters*, Vol. 28, pp. 233-242.
- (33) B. Zwart, S. Borst, and M. Mandjes (2001). Exact queueing asymptotics multiple heavy-tailed on-off flows. *Proceedings Infocom 2001*, pp. 279-288.
- (34) M. Mandjes and A. Ridder (2001). A large deviations approach to the transient of the Erlang loss model. *Performance Evaluation*, Vol. 43, pp. 181-198.
- (35) K. Kumaran and M. Mandjes (2001). Multiplexing regulated traffic streams: design and performance. *Proceedings Infocom 2001*, pp. 527-536.
- (36) M. Mandjes, I. Saniee, and A. Stolyar (2001). Load characterization, overload prediction, and load anomaly detection for voice over IP traffic. *Proceedings ACM Sigmetrics*, Boston, US, pp. 326-327.
- (37) S. Borst, M. Mandjes, and M. van Uitert (2001). Generalized Processor Sharing queues with heterogeneous traffic classes. *Performance Evaluation Review*, Vol. 29, pp. 40-42.

2002:

- (38) M. Mandjes and A. Ridder (2002). A large deviations analysis of the transient of a queue with many Markov fluid inputs: approximations and fast simulation. *ACM Transactions on Modeling and Computer Simulation*, Vol. 12, pp. 1-26.
- (39) M. Mandjes, D. Mitra, and W. Scheinhardt (2002). A simple model of network access: feedback adaptation of rates and admission control. *Proceedings Infocom 2002*, New York, US, pp. 3-12.
- (40) N.K. Boots and M. Mandjes (2002). Fast simulation of a queue fed by a superposition of many heavy-tailed sources. *Probability in the Engineering and Informational Sciences*, Vol. 16, pp. 205-232.
- (41) S. Borst, M. Mandjes, and M. van Uitert (2002). Generalized Processor Sharing queues with heterogeneous traffic classes. *Proceedings Infocom 2002*, New York, US, pp. 74-83.

2003:

- (42) M. Mandjes, D. Mitra, and W. Scheinhardt (2003). A simple model of network access: feedback adaptation of rates and admission control. *Computer Networks*, Vol. 41, pp. 489-504.
- (43) M. Mandjes, D. Mitra, and W. Scheinhardt (2003). Models of network access using feedback fluid queues. *Queueing Systems*, Vol. 44, pp. 365-398.
- (44) T. Dieker and M. Mandjes (2003). On spectral simulation of fractional Brownian motion. *Probability in the Engineering and Informational Sciences*, Vol. 17, pp. 417-434.
- (45) K. Kumaran, M. Mandjes, and A. Stolyar (2003). Convexity properties of loss and overflow functions. *Operations Research Letters*, Vol. 31, pp. 95-100.
- (46) K. Dębicki and M. Mandjes (2003). Exact overflow asymptotics for queues with many Gaussian inputs. *Journal of Applied Probability*, Vol. 40, pp. 704-720.
- (47) M. Mandjes and M. van Uitert (2003). Sample-path large deviations for tandem queues with Gaussian inputs. *Proceedings ITC 18*, Berlin, Germany, pp. 521-530.

- (48) S. Borst, M. Mandjes, and M. van Uiter (2003). Generalized Processor Sharing queues with light-tailed and heavy-tailed input. *IEEE/ACM Transactions on Networking*, Vol. 11, pp. 821-834.
- (49) S. Borst, M. Mandjes, and M. van Uiter (2003). Generalized Processor Sharing queues with heterogeneous traffic classes. *Advances in Applied Probability*, Vol. 35, pp. 806-845.
- (50) N. van Foreest, M. Mandjes, and W. Scheinhardt (2003). Analysis of a feedback fluid model for TCP with heterogeneous sources. *Stochastic Models*, Vol. 19, pp. 299-324.
- (51) N. van Foreest, M. Mandjes, and W. Scheinhardt (2003). Modeling and fairness aspects of asymmetric TCP sources. *Proceedings ITC 18*, Berlin, Germany, pp. 631-640.
- (52) P. Lassila, H. van den Berg, M. Mandjes, and R. Kooij (2003). An integrated packet/flow model for TCP performance analysis. *Proceedings ITC 18*, Berlin, Germany, pp. 651-660.
- (53) R. van de Meent, A. Pras, M. Mandjes, H. van den Berg, and L. Nieuwenhuis (2003). Traffic measurements for link dimensioning - a case study. In: M. Brunner and A. Keller (eds.): *Self-managing distributed systems*. 14th IFIP/IEEE International Workshop on Distributed Systems Operations and Management, DSOM 2003. Heidelberg, Germany, October 2003. Lecture Notes in Computer Science (LNCS) Series, 2867, pp. 106-117.
- (54) M. Mandjes (2003). Pricing strategies under heterogeneous service requirements. *Computer Networks*, Vol. 42, pp. 231-249.
- (55) M. Mandjes (2003). Pricing strategies under heterogeneous service requirements. *Proceedings Infocom 2003*, San Francisco, US.
- 2004:
- (56) B. Zwart, S. Borst, and M. Mandjes (2004). Exact asymptotics for fluid queues fed by multiple heavy-tailed on-off sources. *Annals of Applied Probability*, Vol. 14, pp. 903-957.
- (57) K. Dębicki and M. Mandjes (2004). Traffic with an fBm limit: convergence of the stationary workload process. *Queueing Systems*, Vol. 46, pp. 113-127.
- (58) M. Mandjes (2004). A note on the benefits of buffering. *Stochastic Models*, Vol. 20, pp. 43-54.
- (59) M. Mandjes and N.K. Boots (2004). The shape of the loss curve, and the impact of long-range dependence on network performance. *AEÜ International Journal on Electronics and Communications*, Vol. 58, pp. 101-117.
- (60) M. Mandjes (2004). Pricing strategies and service differentiation. *Netnomics*, Vol. 6, pp. 59-81.
- (61) M. Mandjes (2004). Packet models revisited: tandem and priority systems. *Queueing Systems*, Vol. 47, pp. 363-377.
- (62) P. Lassila and M. Mandjes (2004). A multi-level TCP model with heterogeneous RTTs. In: N. Mitrou, K. Kontovasilis, G. Rouskas, I. Iliadis, L. Merakos (eds.): *Networking Technologies, Services, and Protocols; Performance of Computer and Communication Networks; Mobile and Wireless Communications*. Third International IFIP-TC6 Networking Conference (Networking 2004), Athens, Greece. Lecture Notes in Computer Science (LNCS) Series, 3042, pp. 52-63.
- (63) R. van de Meent, A. Pras, M. Mandjes, H. van den Berg, F. Roijers, P. Venemans, and L. Nieuwenhuis (2004). Burstiness predictions based on rough network traffic measurements. *Proceedings WTC/ISS 2004*, Seoul, South Korea.

2005:

- (64) D. Abendroth, H. van den Berg, and M. Mandjes (2005). A multiple time-scale model for TCP bandwidth sharing under user heterogeneity. In: R. Boutaba et al. (eds.): *Networking Technologies, Services, and Protocols; Performance of Computer and Communication Networks; Mobile and Wireless Communication Systems*. Fourth International IFIP-TC6 Networking Conference (Networking 2005), Waterloo, Canada. Lecture Notes in Computer Science (LNCS) Series, 3462, pp. 561-573.
- (65) M. Mandjes and R. van de Meent (2005). Inferring traffic burstiness by sampling the buffer occupancy. In: R. Boutaba et al. (eds.): *Networking Technologies, Services, and Protocols; Performance of Computer and Communication Networks; Mobile and Wireless Communication Systems*. Fourth International IFIP-TC6 Networking Conference (Networking 2005), Waterloo, Canada. Lecture Notes in Computer Science (LNCS) Series, 3462, pp. 303-315.
- (66) R. van de Meent and M. Mandjes (2005). Evaluation of ‘user-oriented’ and ‘black-box’ traffic models for link provisioning. Proceedings 1st EuroNGI Conference on Next Generation Internet Networks - Traffic Engineering, Rome, Italy.
- (67) R. Malhotra, R. van Haalen, M. Mandjes, and R. Núñez-Queija (2005). Modeling the interaction of IEEE 802.3x hop-by-hop flow control with TCP end-to-end flow control. Proceedings 1st EuroNGI Conference on Next Generation Internet Networks - Traffic Engineering, Rome, Italy.
- (68) N. van Foreest, M. Mandjes, J.C. van Ommeren, and W. Scheinhardt (2005). A tandem network with server slow-down and blocking. *Stochastic Models*, Vol. 21, pp. 695-724.
- (69) W. Scheinhardt, N. van Foreest, and M. Mandjes (2005). Continuous feedback fluid queues. *Operations Research Letters*, Vol. 33, pp. 551-559.
- (70) T. Dieker and M. Mandjes (2005). On asymptotically efficient simulation of large deviation probabilities. *Advances in Applied Probability*, Vol. 37, pp. 539-552.
- (71) M. Mandjes and M. Nuyens (2005). Sojourn times in the M/G/1 FB queue with light-tailed service times. *Probability in the Engineering and Informational Sciences*, Vol. 19, pp. 351-361.
- (72) M. Mandjes and M. van Uitert (2005). Sample-path large deviations for tandem and priority queues with Gaussian inputs. *Annals of Applied Probability*, Vol. 15, pp. 1193-1226.
- (73) M. Mandjes and M. van Uitert (2005). Sample-path large deviations for Generalized Processor Sharing queues with Gaussian inputs. *Performance Evaluation*, Vol. 61, pp. 225-256.
- (74) A. Pras, R. van de Meent, and M. Mandjes (2005). QoS in hybrid networks: an operator’s perspective. In: H. de Meer and N. Bhatti (eds.). Proceedings IW-QoS workshop 2005. Passau, Germany. Lecture Notes in Computer Science (LNCS) Series, 3552, pp. 388-391.
- (75) M. Mandjes, I. Saniee, and A. Stolyar (2005). Load characterization, overload prediction, and load anomaly detection for voice over IP traffic. *IEEE Transactions on Neural Networks*, Vol. 16, pp. 1019-1028.
- (76) M. Mandjes, P. Mannersalo, and I. Norros (2005). Priority queues with Gaussian input: a path-space approach to loss and delay asymptotics. *Proceedings ITC 19*, Beijing, China, pp. 1135-1144.

(77) D. Abendroth, H. van den Berg, and M. Mandjes (2005). A versatile model for TCP bandwidth sharing in networks with user heterogeneity. In: B.D. Choi (ed.): Proceedings Korea-Netherlands Joint Conference on Queueing Theory and its Applications to Telecommunication Systems, Seoul, South Korea, pp. 173-188.

2006:

(78) M. Mandjes (2006). Large deviations for complex buffer architectures: the short-range dependent case. *Stochastic Models*, Vol. 22, pp. 99-128.

(79) M. Mandjes and B. Zwart (2006). Large deviations for sojourn times in processor sharing queues. *Queueing Systems*, Vol. 52, pp. 237-250.

(80) H. van den Berg, M. Mandjes, R. van de Meent, A. Pras, F. Roijers, and P. Venemans (2006). QoS-aware bandwidth provisioning of IP links. *Computer Networks*, Vol. 50, pp. 631-647.

(81) D. Abendroth, H. van den Berg, and M. Mandjes (2006). A versatile model for TCP bandwidth sharing in networks with heterogeneous users. *AEÜ International Journal on Electronics and Communications*, Vol. 60, pp. 267-278.

(82) M. Mandjes, P. Mannersalo, I. Norros, and M. van Uitert (2006). Large deviations of infinite intersections of events in Gaussian processes. *Stochastic Processes and their Applications*, Vol. 116, pp. 1269-1293.

(83) O. Kella, O. Boxma, and M. Mandjes (2006). A Lévy process reflected at a Poisson age process. *Journal of Applied Probability*, Vol. 43, pp. 221-230.

(84) M. Mandjes and P. Mannersalo (2006). Queueing systems fed by many exponential on-off sources: an infinite-intersection approach. To appear in *Queueing Systems*, Vol. 54, pp. 5-20.

(85) T. Dieker and M. Mandjes (2006). Fast simulation of overflow probabilities in a queue with Gaussian input. *ACM Transactions on Modeling and Computer Simulation*, Vol. 16, pp. 119-151.

(86) T. Dieker and M. Mandjes (2006). Efficient simulation of random walks exceeding a nonlinear boundary. *Stochastic Models*, Vol. 22, pp. 459-481.

(87) P. Lieshout, M. Mandjes, and S. Borst (2006). GPS scheduling: Selection of optimal weights and comparison with strict priorities. *Proceedings ACM Sigmetrics/Performance. Performance Evaluation Review*, Vol. 34, pp. 75-86.

(88) R. van de Meent, M. Mandjes, and A. Pras (2006). Gaussian traffic everywhere? *Proceedings IEEE International Conference on Communications*, Istanbul, Turkey.

(89) H. van den Berg, M. Mandjes, and F. Roijers (2006). Performance modeling of a bottleneck node in an IEEE 802.11 ad-hoc network. In: T. Kunz and S.S. Ravi (eds.): *Ad Hoc Now 2006*. 5th International Conference on Ad hoc Networks & Wireless 'Ad Hoc Now', Ottawa, Canada. Lecture Notes in Computer Science (LNCS) Series, 4104, pp. 321-336.

(90) N. Degrande, D. De Vleeschauwer, R. Kooij, and M. Mandjes (2006). Modeling ping times in first person shooter games. *Proceedings ACM CoNEXT '06*, Lisbon, Portugal, pp. 162-170.

(91) P. Lieshout, S. Borst, and M. Mandjes (2006). Heavy-traffic approximations for linear networks operating under alpha-fair bandwidth-sharing policies. *Proceedings ValueTools*, Pisa, Italy.

- (92) H. van den Berg, M. Mandjes, and F. Roijers (2006). Performance modeling of a bottleneck node in an IEEE 802.11 ad-hoc network. In: M. Mandjes, A. Ridder, and H. Tijms (eds.): *Proceedings second Korea-Netherlands Joint Conference on Queueing Theory and its Applications to Telecommunication Systems*, Amsterdam, the Netherlands, pp. 1-15.
- (93) O. Boxma, M. Mandjes, and O. Kella (2006). On a queueing model with service interruptions. In: M. Mandjes, A. Ridder, and H. Tijms (eds.): *Proceedings second Korea-Netherlands Joint Conference on Queueing Theory and its Applications to Telecommunication Systems*, Amsterdam, the Netherlands, pp. 33-43.
- (94) M. Mandjes and F. Roijers (2006). A fluid system with coupled input and output, and its application to bottlenecks in ad hoc networks. In: M. Mandjes, A. Ridder, and H. Tijms (eds.): *Proceedings second Korea-Netherlands Joint Conference on Queueing Theory and its Applications to Telecommunication Systems*, Amsterdam, the Netherlands, pp. 186-206.
- (95) D. Miretskiy, W. Scheinhardt, and M. Mandjes (2006). Efficient simulation of a tandem queue with server slowdown. *Proceedings 6th International Workshop on Rare Event Simulation*, Bamberg, Germany, pp. 132-143.
- 2007:
- (96) R. Egorova, M. Mandjes, and B. Zwart (2007). Sojourn-time asymptotics in processor-sharing queues with varying service rate. *Queueing Systems*, Vol. 56, pp. 169-181.
- (97) M. Mandjes and F. Roijers (2007). A fluid system with coupled input and output, and its application to bottlenecks in ad hoc networks. *Queueing Systems*, Vol. 56, pp. 79-92.
- (98) R. van de Meent, M. Mandjes, and A. Pras (2007). Smart dimensioning of IP network links. Smart dimensioning of IP network links. In: A. Clemm, G. Zambenedetti, and R. Stadler (eds.): *Managing Virtualization of Networks and Services. 18th IFIP-IEEE International Workshop on Distributed Systems: Operations and Management*, DSOM 2007. San Jose, US. Lecture Notes in Computer Science (LNCS) Series, 4785, pp. 86-97.
- (99) M. Mandjes and J. Timmer (2007). A duopoly model with heterogeneous congestion-sensitive customers. *European Journal of Operational Research*, Vol. 176. pp. 445-467.
- (100) M. Mandjes, P. Mannersalo, and I. Norros (2007). Gaussian tandem queues with an application to dimensioning of switch fabrics. *Computer Networks*, Vol. 51, pp. 781-797.
- (101) M. Mandjes (2007). Analysis of jitter due to call-level fluctuations. *European Transactions on Telecommunications*, Vol. 18, pp. 97-108.
- (102) K. Debicki, M. Mandjes, and M. van Uitert (2007). A tandem queue with Lévy input: a new representation of the downstream queue length. *Probability in the Engineering and Informational Sciences*, Vol. 21, pp. 83-107.
- (103) N. van Foreest, B. Haverkort, M. Mandjes, and W. Scheinhardt (2007). Versatile Markovian models for networks of asymmetric TCP sources. *Performance Evaluation*, Vol. 64, pp. 507-523.
- (104) H. van den Berg, M. Mandjes, and R. Núñez-Queija (2007). Pricing and distributed Quality of Service control for elastic traffic. *Operations Research Letters*, Vol. 35, pp. 297-307.
- (105) F. Roijers, M. Mandjes, and H. van den Berg (2007). Analysis of congestion periods in an M/M/ ∞ queue. *Performance Evaluation*, Vol. 64, pp. 737-754.

- (106) F. Roijers, H. van den Berg, and M. Mandjes (2007). Fluid-flow modeling of a relay node in an IEEE 802.11 wireless ad hoc network. In: L. Mason, T. Drwiega, and J. Yan (eds.): *Proceedings ITC 20*, Ottawa, Canada. Lecture Notes in Computer Science (LNCS) Series, 4516, pp. 321-334.
- (107) K. Dębicki and M. Mandjes (2007). A note on large buffer asymptotics for generalized processor sharing queues with Gaussian inputs. *Queueing Systems*, Vol. 55, pp. 251-254.
- (108) D. Miretskiy, W. Scheinhardt, and M. Mandjes (2007). Tandem queue with server slowdown. *Performance Evaluation Review*, Vol. 35, pp. 51-52.
- (109) J. Blanchet and M. Mandjes (2007). Rare-event simulation for queues – editorial. *Queueing Systems*, Vol. 57, pp. 57-59.
- (110) D. Miretskiy, W. Scheinhardt, and M. Mandjes (2007). Efficient simulation of a tandem queue with server slowdown. *Simulation*, Vol. 83, pp. 751-767.
- (111) P. Lieshout and M. Mandjes (2007). Brownian tandem queues. *Mathematical Methods in Operations Research*, Vol. 66, pp. 275-298.
- (112) P. Lieshout and M. Mandjes (2007). Importance sampling in rate-sharing networks. *Proceedings SIMUTools*, Marseille, France.
- (113) J. Göbel, A. Krzesinski, and M. Mandjes (2007). Analysis of an ad hoc network with autonomously moving nodes. *Proceedings Australasian Telecommunication Networks and Applications Conference “ATNAC” 2007*, Christchurch, New Zealand, pp. 41-46.
- 2008:
- (114) M. Mandjes and M. Ramakrishnan (2007). Bandwidth trading under misaligned objectives: decentralized, measurement-based control. *Computer Networks*, Vol. 52, pp. 475-492.
- (115) P. Lieshout and M. Mandjes (2008). A note on the delay distribution in Generalized Processor Sharing. *Operations Research Letters*, Vol. 36, pp. 117-122.
- (116) P. Lieshout and M. Mandjes (2008). Generalized Processor Sharing: Characterization of the admissible region and selection of optimal weights. *Computers and Operations Research*, Vol. 35, pp. 2497-2519.
- (117) M. Mandjes and W. Scheinhardt (2008). A fluid model for a relay node in an ad hoc network: evaluation of resource sharing policies. *Journal of Applied Mathematics and Stochastic Analysis*.
- (118) D. Miretskiy, W. Scheinhardt, and M. Mandjes (2008). State-dependent importance sampling for a slowdown tandem queue. *Proceedings 7th International Workshop on Rare Event Simulation*, Rennes, France.
- (119) D. Miretskiy, W. Scheinhardt, and M. Mandjes (2008). Simulation of a Jackson tandem network using state-dependent importance sampling. *Proceedings SMCTools*, Athens, Greece.
- (120) O. Boxma, M. Mandjes, and O. Kella. On a queueing model with service interruptions. *Probability in the Engineering and Informational Sciences*, Vol. 22. pp. 537-555.

To appear:

- (121) M. Mandjes. Queueing networks with Gaussian inputs. In: R. Boucherie and N. van Dijk (eds.): *Queueing Networks: a fundamental approach*.

- (122) U. Ayesta and M. Mandjes. Bandwidth sharing networks under a diffusion scaling. *Annals of Operations Research*.
- (123) R. Malhotra, M. Mandjes, W. Scheinhardt, and H. van den Berg. A feedback fluid queue with two congestion control thresholds. *Mathematical Methods in Operations Research*.
- (124) A. Es-Saghouani and M. Mandjes. On the correlation structure of a Lévy-driven queue. *Journal of Applied Probability*.
- (125) P. Lieshout and M. Mandjes (2008). Asymptotic analysis of Lévy-driven tandem queues. *Queueing Systems*.
- (126) I. Adan, M. Mandjes, W. Scheinhardt, and E. Tzenova. On a generic class of two-node queueing systems. *Queueing Systems*.
- (127) R. Bekker and M. Mandjes. A fluid model for a relay node in an ad-hoc network: the case of heavy-tailed input. *Mathematical Methods in Operations Research*.
- (128) J. Timmer and M. Mandjes (2008). Efficiency of repeated network interactions. *AEÜ International Journal on Electronics on Communications*.

Other publications

- (1) A. Ridder and M. Mandjes (1995). Fast simulation of Markov modulated fluid models. *B-ISDN Teletraffic Modelling Symposium, Antwerp, Belgium*.
- (2) M. Mandjes and H. van den Berg (1995). A new approach to buffer and bandwidth allocation in single- and multi-link ATM systems. *COST 242, TD(95) 51*.
- (3) M. Mandjes and K. Tutschku (1996). Efficient call handling procedures in cellular mobile networks. *Forschungsreihe Nr. 144, Universität Würzburg, Institut für Informatik*.
- (4) M. de Graaf, M. Mandjes, and H. van den Berg (1997). On the efficiency of EMW's Connection Admission Control algorithm. *COST 257, TD(97) 34*.
- (5) M. Mandjes and H. van den Berg (1997). CAC for integrated real-time and non-real-time traffic. *COST 257, TD(97) 55*.
- (6) M. Mandjes (1997). Asymptotically optimal importance sampling for tandem queues with Markov fluid input. *Proceedings 1st International Workshop on Rare Event Simulation, Aachen, Germany*.
- (7) M. Mandjes and A. Weiss (1999). Sample path large deviations of a multiple time-scale queueing model. *Bell Labs, Lucent Technologies, internal report*.
- (8) F. Brichet, M. Mandjes, and M. Sánchez-Cañabate (1999). COST 257 Mid-term seminar interim report on admission control.

Submitted papers

- (1) M. Mandjes and A. Weiss (2005). Sample path large deviations of a multiple time-scale queueing model.
- (2) T. Dieker and M. Mandjes (2007). Extremes of Markov-additive processes with one-sided jumps, with queueing applications.

- (3) M. Mandjes and R. van de Meent (2007). Resource dimensioning through buffer sampling.
- (4) O. Boxma, O. Kella, and M. Mandjes (2007). On a generic class of Lévy-driven vacation models.
- (5) J. Ivanovs, O. Boxma, and M. Mandjes (2008). Singularities of the generator of a Markov additive process with one-sided jumps.
- (6) O. Boxma, O. Kella, and M. Mandjes (2008). On Lévy-driven vacation models with correlated busy periods and service interruptions.
- (7) A. Es-Saghouani and M. Mandjes (2008). Transient analysis of Markov fluid driven queues.
- (8) D. Miretskiy, W. Scheinhardt, and M. Mandjes (2008). State-dependent importance sampling for a Jackson tandem network.
- (9) M. Mandjes and J. Blanchet (2008). Rare-event simulation for queues.
- (10) P. L'Ecuyer, M. Mandjes, and B. Tuffin (2008). Importance sampling and rare-event simulation.
- (11) M. Mandjes, I. Norros, and P. Glynn (2008). On convergence to stationarity of fractional Brownian storage.
- (12) A. Es-Saghouani and M. Mandjes (2007). On the correlation structure of Gaussian queues.
- (13) R. Malhotra, M. Mandjes, W. Scheinhardt, and H. van den Berg (2008). Design issues of a backpressure-based congestion control mechanism.
- (14) A. Pras, R. van de Meent, M. Mandjes, and L. Nieuwenhuis (2008). Network link dimensioning.
- (15) F. Roijers, H. van den Berg, and M. Mandjes (2008). Performance of differentiated resource sharing in a wireless ad hoc network.
- (16) M. Mandjes and F. Roijers (2008). M/M/ ∞ transience: tail asymptotics of congestion periods.
- (17) J. Göbel, A. Krzesinski, and M. Mandjes (2007). Incentive-based control of ad-hoc networks: a performance study.
- (18) B. Kemper, J. de Mast, and M. Mandjes (2008). Modeling process flow using diagrams.
- (19) K. Dębicki, A. Es-Saghouani, and M. Mandjes (2008). Transient characteristics of Gaussian queues.

Contributions to books

- (1) J. Roberts, U. Mocchi, and J. Virtamo, eds. (1996). Broadband network teletraffic. Final report of action COST 242. *Springer Verlag*.
- (2) D. Songhurst, ed. (1999). Charging communication networks. From theory to practice. *Cambridge University Press*.

Popular (in Dutch)

- (1) M. Mandjes and I. Smeets (2005). Apen, typemachines en abracadabra. *Kennislink*.
- (2) J. van Praag and M. Mandjes (2007). Kansen en overlapgetallen. *Pythagoras*.
- (3) M. Mandjes (2007). Nieuwe Kansen. *Nieuw Archief voor Wiskunde*.

Patents

- (1) J. van Lierop, M. Mandjes, and K. van der Wal (1999). System for charging the use of a packet-based telecommunication network. Date of filing: June 7, 1999. Patent Nr: 99927918.5-2216. Granted for the Netherlands under Nr: 1009987. Granted for Europe [AT BE CH DE DK ES FI FR GB GR IE IT LI LU NL PT SE] under Nr: EP1086549.
- (2) K. Kumaran and M. Mandjes (2006). Method and apparatus for processing of regulated connections in a communication network. Date of filing: October 31, 2001. Granted for the US under Nr: 7,136,352.

Update: November 4, 2008.