Quantitative
Modeling
In
Parallel
Systems

A biliography of papers done for QMIPS

November 92 – October 1995

R W0.T0.9.v4

29 October 1995

Distribution Level: All Partners

Approved by: F. Baccelli

Abstract This is the list of papers published by the partners of the QMIPS project on QMIPS topics. Many of there references have been quoted in the Periodic Progress Reports of the project

The QMIPS Project: The QMIPS project is a collaborative research project supported by the CEC as ESPRIT-BRA project no 7269. It is being carried out by the following organisations: CWI (Amsterdam), EHEI (University of Paris V), Imperial College (London), INRIA (Sophia-Antipolis), University of Erlangen, University of Newcastle, University of Torino and University of Zaragoza.

References

[1] J. Aguilar. The random neural network model for the large acyclic graph partitioning problem. In *ISCIS VI (International Symposium on Computer and Information Sciences)*, Antalya, Turkey, November 1992.

[2] J. Aguilar. Combinatorial optimization methods. a study of the graph partitioning problem. In *Proc. Panamerican Workshop on Applied and Computational Mathematics*, Caracas, Venezuela, 1993.

[3] J. Aguilar. Heuristic algorithms for task assignment of parallel programs. In *Proc. Intl Conference on Massively Parallel Processing, Applications and Development*, Delft, June 1994. Elsevier Science Publishers.

[4] J. Aguilar. *Allocation de Tâches et Optimisation Combinatoire.* PhD thesis, Université Paris V, January 1995.

[5] M. Ajmone Marsan, G. Balbo, G. Conte, S. Donatelli, and G. Franceschinis. *Modelling with Generalized Stochastic Petri Nets*. J. Wiley, 1995.

[6] E. Altman. Analysis of timed-token ring protocols. In *ITC 14: 14th International Teletraffic Congress*, Antibes, June 1994. To appear; also INRIA report No. 1570, December 1991.

[7] E. Altman. Denumerable constrained Markov decision problems and finite approximations. *Math. of Operations Research*, 19(1):169–191, 1994.

[8] E. Altman, F. Baccelli, and J.-C. Bolot. Discrete-time analysis of adaptive rate control mechanisms. In H.G. Perros and Y. Viniotis Eds, editors, *High Speed Networks and their performance*, pages 121–140. North Holland, 1994. (proceedings of the 5th international conference on High Speed Networks, Raleigh, USA, October 1993). Also: 3rd joint ENST Paris/INA Stuttgart workshop on high speed networks, Paris, March 23, 1993.

[9] E. Altman and S. Foss. Polling on a graph with general arrival and service time. Technical Report 1992, INRIA, 1993. Submitted to Queueing Systems.

[10] E. Altman, S. Foss, E. Riehl, and S. Stidham. Sample path analysis of token rings. In *14th International Teletraffic Congress*, Antibes, France, June 1994.

[11] E. Altman and A. Hordijk. Zero-sum Markov games and worst-case optimal control of queueing systems. Technical Report TW-94-01, University of Leiden, 1994. Submitted to *QUESTA*, special issue on optimization of queueing systems, 1994.

[12] E. Altman and D. Kofman. Sample path bounds for performance measures of token rings. Technical report, Telecom Paris, 1994.

[13] E. Altman and G. Koole. Stochastic scheduling games with Markov decision arrival processes. *Computers and Mathematics with Applications*, 26:141–148, 1993.

[14] E. Altman and G. Koole. Control of a random walk with noisy delayed information. *Systems and Control Letters*, 1994. To appear.

[15] E. Altman and Z. Liu. Improving the stability characteristics of asynchronous traffic in FDDI token rings. In *High Speed Networks and their performance*, pages 441–460, Raleigh, USA, October 1993. North Holland. INRIA Report #1934.

[16] E. Altman and U. Yechiali. Closed polling systems. *Probability in the Engineering and Informational Sciences*, 1994.

[17] A. Ametistova and I. Mitrani. Modelling and evaluation of cache coherence protocols in multiprocessor systems. In M.E.Woodward, S.Datta, and S.Szumko, editors, *Computer and Telecommunication Systems Performance Engineering*, London, 1994. Pentech Press.

[18] C. Anglano. Performance analysis of heterogeneous applications using generalized stochastic Petri net models. In *Proc. of the 7-th IASTED International Conference on Parallel and Distributed Computing and Systems*, Washington, D.C., 1995.

[19] C. Anglano. Performance modeling of heterogeneous distributed applications. In *Proc. of the International Workshop on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS'96)*, San Jose, CA, D.C., 1996. IEEE-CS Press.

[20] F. Baccelli and P. Brémaud. *Elements of Queueing Theory*, volume 26 of *Applications of Mathematics*. Springer Verlag, 1994.

[21] F. Baccelli and M. Canales. Parallel simulation of stochastic Petri nets using recursive equations. *ACM Transactions on Modeling and Computer Simulation*, 3(1):20–41, January 1993.

[22] F. Baccelli and S. Foss. Stability of Jackson-type queueing networks. *QUESTA*, 17(1945 (1995)):5–72, 1994.

[23] F. Baccelli and S. Foss. On the saturation rule for the stability of queues. *JAP*, 32(2015 (1993)):494–507, June 1995.

[24] F. Baccelli, S. Foss, and B. Gaujal. Structural, timed and stochastic properties of decision free Petri networks. *IEEE Trans. Aut. Contr.*, 1996. To appear.

[25] F. Baccelli, S. Foss, and J. Mairesse. Closed Jackson networks under stationary ergodic assumptions, 1995. In preparation.

[26] F. Baccelli, N. Furmento, and B. Gaujal. Parallel and distributed simulation of free choice Petri nets. In *Proc. Ninth Workshop on Parallel and Distributed Systems (PADS'95)*, Lake Placid, June 1995.

[27] F. Baccelli and B. Gaujal. Stationary regime and stability of free-choice Petri nets. In *Proceedings of the 11-th International on Analysis and Optimisation of Systems*, Sophia Antipolis, France, June 1994. Springer Verlag.

[28] F. Baccelli and Z. Liu. Comparison properties of stochastic decision-free Petri nets. *IEEE Trans. Automatic Control*, 37, December 1992.

[29] F. Baccelli and J. Mairesse. Ergodic theory of stochastic operators and discrete event networks. In J. Gunawardena, editor, *Idempotency*. Cambridge Univ. Press, 1995. To appear.

[30] F. Baccelli and V. Schmidt. Taylor series expansions for poisson driven (max, +)-linear systems. *Annals of Applied Probability*, 1995. To appear. INRIA Report #2494, march 1995.

[31] G. Balbo. On the success of stochastic Petri nets. In *Proc. 6th International Workshop on Petri Nets and Performance Models*, Durham, NC, 1995.

[32] G. Balbo. Stochastic Petri nets: Accomplishments and open problems. In *Proc. International Computer Performance and Dependability Symposium*, Erlangen, Germany, 1995.

[33] W. Bauer. Definition von Leistungsmaßen für TIPP mittels temporaler Logik. Diploma thesis, Universität Erlangen-Nürnberg, IMMD VII, 1995. (Definition of Performance Measures for TIPP using Temporal Logics, in German).

[34] N. Bayer. On the identification of Wiener-Hopf factors. CWI Note BS-N9502, CWI, Amsterdam, September 1995.

[35] N. Bayer and O.J. Boxma. Wiener-Hopf analysis of an $M/G/1$ queue with negative customers and of a related class of random walks". Technical Report BS-R9524, CWI, Amsterdam, September 1995.

[36] N. Bayer, E.G.Jr. Coffman, and Y. Kogan. An asymptotic analysis of closed queueing networks with branching populations. CWI Note BS-R952x, CWI, Amsterdam, September 1995.

[37] M. Bhabuta, P.G. Harrison, and K. Kanani. Detecting reversible structures in markovian process algebra. In *in Proc. 11th UK Performance Engineering Workshop, Liverpool.* Springer-Verlag Workshop Series, September 1995.

[38] H. Bohnenkamp. Compositional semantics of stochastic process algebras to obtain reduced transition systems. Master's thesis, Universität Erlangen-Nürnberg, 1995. Diploma Thesis (in German).

[39] H. Bohnenkamp. Matrix-semantics for TIPP. Master's thesis, Universität Erlangen-Nürnberg, IMMD VII, September 1995. In German.

[40] S.C. Borst. *Polling Systems.* PhD thesis, Tilburg University, November 1994. CWI Press.

[41] S.C. Borst. Optimal probabilistic allocation of customer types to servers. In *Proc. ACM Sigmetrics/Performance '95*, pages 116–125, Ottawa, 1995. an updated version has appeared in: *Quantitative Models in Parallel Systems*, F. Baccelli, A. Jean-Marie and I. Mitrani (eds.), Springer, Berlin.

[42] S.C. Borst and O.J. Boxma. Polling models with and without switchover times. Technical Report BS-R9421, CWI, 1994. To appear in *Oper. Res.*

[43] S.C. Borst, O.J. Boxma, J.H.A. Harink, and G.B. Huitema. Optimization of fixed time polling schemes. *Telecommunications Systems*, 3:31–59, 1994.

[44] S.C. Borst, O.J. Boxma, and H. Levy. The use of service limits for efficient operation of multi–station single–medium communication systems. *IEEE Trans. Networking*, 3(5), 1995.

[45] R.J. Boucherie. Aggregation of Markov chains. *Stochastic Processes and their Applications*, 45:95–114, 1993.

[46] R.J. Boucherie. A characterisation of independence for competing Markov chains with applications to stochastic Petri nets. *IEEE Trans. Soft. Eng.*, 20:536–544, 1994. Also: *Proc. PNPM'93*, Toulouse, Oct. 1993 and INRIA Report #1880.

[47] R.J. Boucherie. Product forms based on backward traffic equations. Technical Report BS-R9401, CWI, 1994.

[48] R.J. Boucherie and O.J. Boxma. The workload in the $M/G/1$ queue with work removal. Technical Report BS-R9505, CWI, Amsterdam, February 1995. To appear in *Probability in the Engineering and Informational Sciences.*

[49] R.J. Boucherie and N.M. Dijk, van. A generalization of Norton's theorem for queueing networks. *QUESTA*, 13:251–289, 1993.

[50] R.J. Boucherie and M. Sereno. A structural characterisation of product form stochastic Petri nets. Technical Report BS-R9402, CWI, 1994.

[51] O.J. Boxma. Polling systems. In *From Universal Morphisms to Megabytes: a Baayen Space Odyssey*, pages 215–230, Amsterdam, December 1994.

[52] O.J. Boxma. Static optimization of queueing systems. In R.P. Agarwal, editor, *Recent Trends in Optimization Theory and Applications.* World Scientific Publishing, Singapore, 1995. CWI report #BS-R9506, Feb. 1995.

[53] O.J. Boxma and G.J. Houtum, van. The compensation approach applied to a 2×2 switch. *Probability in the Engineering and Informational Sciences*, 7:471–493, 1994.

[54] O.J. Boxma and J.A.C.Resing. Tandem queues with deterministic service times. *Annals of Oper. Res*, 49:221–239, 1994.

[55] O.J. Boxma and M. Kelbert. Stochastic bounds for a polling system. *Annals of Oper. Res*, 48:295–310, 1994.

[56] O.J. Boxma and G. Koole, editors. *Performance Evaluation of Parallel and Distributed Systems, Parts I and II.* Number 105 and 106 in CWI Tracts. CWI, Amsterdam, 1994. Proceedings of the Torino Workshop.

[57] O.J. Boxma, G. Koole, and Z. Liu. Queueing-theoretic solution methods for models of parallel and distributed systems. In O.J. Boxma and G. Koole, editors, *Performance Evaluation of Parallel and Distributed Systems*, number 105 and 106 in CWI Tracts, pages 1–21. CWI, Amsterdam, 1994. Proceedings of the Torino Workshop.

[58] O.J. Boxma, G.M. Koole, and I. Mitrani. Polling models with threshold switching. In F. Baccelli, A. Jean-Marie, and I. Mitrani, editors, *Quantitative Models in Parallel Systems*, pages 129–140. Springer, Berlin, 1995.

[59] O.J. Boxma, G.M. Koole, and I. Mitrani. A two-queue polling model with a threshold service policy. In P. Dowd and E. Gelenbe, editors, *Proc. MASCOTS '95*, pages 84–89, Los Alamitos (CA), 1995. IEEE Computer Society Press.

[60] O.J. Boxma and U. Yechiali. An $M/G/1$ queue with multiple types of feedback and gated vacations. Technical Report BS-R9521, CWI, Amsterdam, August 1995. To appear in Applied Probability, C.C. Heyde et al. (eds.), Springer L.N. in Statistics, Springer, Berlin, 1996.

[61] J.L. Briz, J.M. Colom, and M. Silva. Discrete event simulation based on timed Petri nets using linear enabling functions. In *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics*, pages 1671–1676, San Antonio, Texas, October 1994.

[62] J. Campos, J.M. Colom, H. Jungnitz, and M. Silva. A general iterative technique for approximate throughput computation of stochastic marked graphs. In *Proc. 5th International Workshop of Petri Nets/Performance Models (PNPM'93)*, pages 138–147, Toulouse, France, October 1993. selected for publication in a special issue of *IEEE Transactions on Software Engineering* on the PNPM93 Conference.

[63] J. Campos, J.M. Colom, H. Jungnitz, and M. Silva. Approximate throughput computation of stochastic marked graphs. *IEEE Trans. Soft. Engineering*, 20(7):526–535, July 1994.

[64] J. Campos, J.M. Colom, M. Silva, and E. Teruel. Functional and performance analysis of cooperating sequential processes. In O.J. Boxma and G.M. Koole, editors, *Performance Evaluation of Parallel and Distributed Systems: Solution Methods*, volume 106 of *Tract*, pages 233–251. Centrum voor Wiskunde en Informatica, Amsterdam, 1994.

[65] J. Campos, B.F. Plo, and M. San Miguel. Boundedness on stochastic petri nets. *Revista Matemática de la Universidad Complutense de Madrid*, 6(1):123–136, 1993.

[66] J. Campos and M. Silva. Embedded product-form queueing networks and the improvement of performance bounds for stochastic Petri net systems. *Performance Evaluation*, 18(1):3–19, July 1993.

[67] M. Canales. *Simulation Parallèle de réseaux de Petri Stochastiques.* PhD thesis, Univeristé de Nice-Sophia Antipolis, February 1994.

[68] M. Canales and B. Gaujal. Marking optimization and parallelism in marked graphs. Technical Report 2049, INRIA, September 1993.

[69] S. Chabridon. *Execution fiable de programmes répartis en environnement peu fiable.* Doctoral thesis, Univ. Paris V, 1995.

[70] S. Chabridon and E. Gelenbe. Dependability of distributed programs: Algorithms and performance. In F. Baccelli, A. Jean-Marie, and I. Mitrani, editors, *Quantitative Models in Parallel Systems*, pages 220–236. Springer, Berlin, 1995.

[71] S. Chabridon and E. Gelenbe. Dependable distributed computing with the help of agents. In *Euromicro'95*, pages 350–357, San Remo, Italy, Jan. 25-27, 1995. IEEE Computer Society Press.

[72] S. Chabridon and E. Gelenbe. Dependable execution of distributed programs. In *14th Symposium on Reliable Distributed Systems (SRDS-14)*, pages 229–238, Bad Neuenahr, September 13-15 1995.

[73] S. Chabridon, E. Gelenbe, M. Hernández, and A. Labed. G-networks: A survey of results, applications and solutions. In F. Baccelli, A. Jean-Marie, and I. Mitrani, editors, *Quantitative Models in Parallel Systems*, pages 114–128. Springer, Berlin, 1995.

[74] R. Chakka. *Performance and Reliability Modelling of Computing Systems Using Spectral Expansion.* PhD thesis, University of Newcastle, September 1995.

[75] R. Chakka. Spectral expansion solution for large markov processes with finite state space. In *3rd Intl. Workshop on Queueing Networks with Finite Capacity*, Bradford, September 1995.

[76] R. Chakka and I. Mitrani. A numerical solution method for multiprocessor systems with general breakdowns and repairs. In *Int. Conf. on Modelling Techniques*, Edinburgh, 1992.

[77] R. Chakka and I. Mitrani. Heterogeneous multiprocessor systems with breakdowns: Performance and optimal repair strategies. *Theoretical Computer Science*, 125:91–109, 1994.

[78] R. Chakka and I. Mitrani. Approximate solution methods for open queueing networks with breakdowns and repairs. In *Stochastic Networks Workshop*, Edinburgh, 1995.

[79] G. Chiola. Characterization of timed well-formed Petri nets behavior by means of occurence equations. In *Proc. 6th International Workshop on Petri Nets and Performance Models*, Durham, NC, 1995.

[80] G. Chiola and C. Anglano. Linear programming performance bounds for symmetric coloured nets. In *Proc. 5th International Workshop of Petri Nets/Performance Models (PNPM'93)*, Toulouse, France, October 1993.

[81] G. Chiola, J. Campos, J.M. Colom, and M. Silva. Operational analysis of timed Petri nets and application to the computation of performance bounds. In *Performance'93*, Roma, Italy, September 1993.

[82] G. Chiola, J. Campos, Colom J.M., M. Silva, and C. Anglano. Operational analysis of timed Petri nets and application to the computation of performance bounds. In *Proc. 5th International Workshop of Petri Nets/Performance Models (PNPM'93)*, Toulouse, France, October 1993.

[83] G. Chiola, C. Dutheillet, G. Franceschinis, and S. Haddad. Stochastic well-formed coloured nets for symmetric modelling applications. *IEEE Transactions on Computers*, 42(11):1343–1360, November 1993.

[84] G. Chiola and A. Ferscha. Distributed simulation of Petri nets. *IEEE Journal of Parallel and Distributed Technology*, 1(3):33–50, 1993.

[85] G. Chiola and A. Ferscha. Distributed simulation of timed Petri nets: exploiting the net structure to obtain efficiency. In 14^{th} *International Conference on Application and Theory of Petri Nets*, number 691 in LNCS, Chicago, Illinois, June 1993. Springer Verlag.

[86] G. Chiola and A. Ferscha. Exploiting Petri net model structure to improve distributed simulation. In *26^{th} Hawaii International Computer Science Symposium*, Honolulu, Hawaii, January 1993.

[87] G. Chiola and A. Ferscha. Self adaptive logical processes: the probabilistic distributed simulation protocol. In 27^{th} *Annual Simulation Symposium*, La Jolla, California, April 1994.

[88] G. Chiola, G. Franceschinis, and R. Gaeta. Modelling symmetric computer architectures by stochastic well-formed coloured nets. In 15^{th} *International Conference on Application and Theory of Petri Nets*, Zaragoza, Spain, June 1994.

[89] J.W. Cohen. On a class of two–dimensional nearest neighbouring random walks. *Stochastic Models*, 8:359–374, 1992.

[90] J.W. Cohen. Analysis of a two-dimensional algebraic nearest-neighbour random walk (queue with paired services). Technical Report BS-R9437, CWI, Amsterdam, December 1994.

[91] J.W. Cohen. Analysis of the asymmetrical shortest two-server queueing model. Technical Report BS-R9509, CWI, Amsterdam, March 1995.

[92] J.W. Cohen. On a class of two-dimensional nearest-neighbour random walks. *J. Appl. Probab.*, 31A:207–237, 1995.

[93] J.W. Cohen. On the symmetrical shortest queue and the compensation approach. Technical Report BS-R9519, CWI, Amsterdam, July 1995.

[94] J.W. Cohen. Two-dimensional nearest-neighbour queueing models, a review and an example. In F. Baccelli, A. Jean-Marie, and I. Mitrani, editors, *Quantitative Models in Parallel Systems*, pages 141–152. Springer, Berlin, 1995.

[95] J.W. Cohen. Two-dimensional nearest-neighbour queueing models, a review and an example. In F. Baccelli, A. Jean-Marie, and I. Mitrani, editors, *Quantitative Models in Parallel Systems*. Springer, Berlin, 1995.

[96] J.W. Cohen and D.G. Down. On the role of Rouché's theorem in queueing analysis. Technical Report BS-R9523, CWI, Amsterdam, August 1995.

[97] M.B. Combe and O.J. Boxma. Optimization of static traffic allocation policies. *Theor. Comp. Sci, special issue on Parallel Systems*, 125:17–43, 1994.

[98] S. Coury and P.G. Harrison. Asymptotic properties of queueing networks. In *7th Int. Conf. on Tools and Techniques for Performance Modelling*, Vienna, May 1994. Poster presentation.

[99] S. Coury and P.G. Harrison. Waiting time distribution in a class of wireless multi-channel local area networks. In *Proc. International Conference on Local and Metropolitan Communication Systems*, Kyoto, December 1994.

[100] H.T. Do. Entwurf von prozeßsprachen zur leistungsbewertung. Diploma thesis, Universität Erlangen-Nürnberg, 1993. Design of Process Languages for Performance Evaluation (in german).

[101] S. Donatelli and G. Franceschinis. State space reductions using stochastic well-formed net simplifications: an application to random polling systems. In *Proc. Sigmetrics 95/Performance*, Ottawa, Canada, 1995. Poster Session.

[102] S. Donatelli, H. Hermanns, J. Hillston, and M. Ribaudo. GSPN and SPA compared in practice. In F. Baccelli, A. Jean-Marie, and I. Mitrani, editors, *Quantitative Models in Parallel Systems*, pages 38–51. Springer, Berlin, 1995.

[103] S. Donatelli, J. Hillston, and M. Ribaudo. A comparison of performance evaluation process algebra and generalized stochastic Petri nets. In *Proc. 6th International Workshop on Petri Nets and Performance Models*, Durham, NC, 1995.

[104] D.G. Down and O.J. Boxma. A polling model with threshold switching. In *Proc. NTS-12 Conference*, Otaniemi, Espoo, Finland, Aug. 22-24 1995.

[105] M. Ettl. *Analysis and optimization of kanban controlled production lines - a queueing network modeling approach.* PhD thesis, Universität Erlangen-Nürnberg, 1995.

[106] M. Ettl and I. Mitrani. Applications of the spectral expansion method: two case studies. In *Proceedings of the QMIPS Workshop on Solution Techniques, Torino, Sept 1993*, CWI Tracts, 1994.

[107] A. Ferscha and G. Chiola. Accelerating the evaluation of parallel program performance models using distributed simulation. In 7^{th} *Intern. Conference on Modeling Techniques and Tools for Computer Performance Evaluation*, Vienna, Austria, May 1994.

[108] A.J. Field and P.G. Harrison. Transmission times in buffered full-crossbar communication networks with cyclic arbitration. In *Int. Conf. on Parallel Processing*, St. Charles, Illinois, August 1994.

[109] A.J. Field and P.G. Harrison. An analytical model for the standard coherent interface SCI. In *Int. Conf. on Parallel Processing*, Oconomowok, Wisconsin, 1995.

[110] A.J. Field and P.G. Harrison. A stochastic model of cache coherency overhead in SCI rings. *IEEE Proceedings*, 1996. Accepted for publication.

[111] A.J. Field, P.G. Harrison, and N. Lehovetski. A uniform-memory access model of a distributed coherent cache system. In *Proc. 10th UK Performance Engineering Workshop*, Edinburgh, September 1994.

[112] A.J. Field, P.G. Harrison, and N. Lehovetski. Performance model of the SCI ring. In *Int. Conf. on Parallel Processing*, Oconomowok, Wisconsin, 1995.

[113] L. Finta and Z. Liu. Scheduling of parallel programs in single-bus multiprocessor systems. Technical Report 2302, INRIA, 1994.

[114] L. Finta and Z. Liu. Single machine scheduling subject to precedence delays. *Disc. Appl. Maths*, 1995. To appear.

[115] L. Finta, Z. Liu, I. Milis, and E. Bampis. Scheduling UET-UCT series-parallel graphs on two processors. Technical Report 2566, INRIA, 1995.

[116] J.M. Fourneau, E. Gelenbe, and R. Suros. G-networks with multiple classes of negative and positive customers. *Theoretical Computer Science*, 1995. To appear.

[117] G. Franceschinis and R.R. Muntz. Bounds for quasi-lumpable Markov chains. In *Performance'93*, Roma, Italy, September 1993.

[118] G. Franceschinis and R.R. Muntz. Computing bounds for the performance indices of quasi-lumpable stochastic well-formed nets. In *Proc. 5th International Workshop of Petri Nets/Performance Models (PNPM'93)*, Toulouse, France, October 1993.

[119] G. Gaeta and G. Chiola. Efficient simulation of SWN models. In *Proc. 6th International Workshop on Petri Nets and Performance Models*, Durham, NC, 1995.

[120] R. Gaeta, G. Chiola, G. Franceschinis, and M. Ribaudo. Greatspn 1.7: Graphical editor and analyzer for timed and stochastic Petri nets. *Performance Evaluation, special issue on Performance Modelling Tools*, August 1995.

[121] F. García-Vallés and J.M. Colom. A boolean approach to the state machine decomposition of place/transition nets. In *IEEE International Conference on Systems, Man and Cybernetics*, Vancouver, British Columbia, Canada, Otc. 22-25, October 19951995. IEEE Computer Society Press.

[122] S. Gaubert and J. Mairesse. Task resource models and (max,+) automata. In J. Gunawardena, editor, *Idempotency.* Cambridge University Press, 1995. To appear.

[123] B. Gaujal. Optimal allocation sequences of two processes sharing a resource. *JDEDS*, 1994. In revision. INRIA Report RR 2223.

[124] B. Gaujal. *Parallélisme et simulation des systèmes à événements discrets.* Thèse de doctorat, Université de Nice-Sophia Antipolis, June 1994.

[125] B. Gaujal. Some algebraic considerations for efficient computations in timed Petri nets. In *Proc. HICSS-29*, Hawaii, January 1996.

[126] B. Gaujal and A. Jean-Marie. Computational issues in recursive stochastic systems. In J. Gunawardena, editor, *Idempotency*. Cambridge University Press, 1995. To appear.

[127] B. Gaujal, A. Jean-Marie, and J. Mairesse. Minimal representation of uniform recurrence equations. Technical Report 2568, INRIA, June 1995.

[128] E. Gelenbe. G-networks with instantaneous customer movement. *Journal of Applied Probability*, 30(3):742–748, 1993.

[129] E. Gelenbe. G-networks with signals and batch removal. *Probability in the Engineering and Information Sciences*, 7:335–342, 1993.

[130] E. Gelenbe. G-networks: A unifying model for neural nets and queueing networks. *Annals of Operations Research*, 1994. To appear, also *in Proc. MASCOTS*, San Diego, California (January 93).

[131] E. Gelenbe. G-networks and minimum cost functions. In *Proc. MASCOTS'95*, pages 135–141, Los Alamitos, 1995. IEEE Computer Society Press. Invited Paper.

[132] E. Gelenbe, O. Boxma, J.-M. Fourneau, M. Hernández, P. Harrison, and E. Pitel. G-networks. In *ACM-SIGMETRICS and IFIP WG 7.3 Sysmposium on System Performance Evaluation*, Ottawa, May 1995.

[133] E. Gelenbe and S. Chabridon. Scheduling distributed tasks for survivability of the application. In *Proc. Parallel Computing Symposium*, Delft, 1994. Elsevier, North-Holland.

[134] E. Gelenbe and S. Chabridon. Dependable execution of distributed programs. *Journal of Simulation Pratice and Theory*, 3:1–16, July 1995.

[135] E. Gelenbe and W. Jin. Convergence of a fixed-point iteration for G-networks. Technical report, EHEI, University Paris V, October 1995.

[136] E. Gelenbe and R. Kushwaha. Incremental adaptive load balancing in distributed systems. submitted for publication, 1993.

[137] E. Gelenbe and R. Kushwaha. Dynamic load balancing in distributed systems. In *Proc. MASCOTS'94*, pages 245–249, Los Alamitos, CA, January 1994. IEEE Computer Society Press.

[138] E. Gelenbe and A. Labed. G-networks with multiple classes of customers and triggers. Technical report, EHEI, University Paris V, October 1995.

[139] E. Gelenbe and F. Pekergin. Load balancing pragmatics. Technical report, EHEI Université René Descartes, February 1993.

[140] E. Gelenbe and M. Schassberger. Stability of product form g-networks. *Probability in the Engineering and Information Sciences*, 6:271–276, 1992.

[141] S. Gilmore, J. Hillston, R. Holton, and M. Rettelbach. Specifications in stochastic process algebra for a robot control problem. CSG Report Series ESG-CSG-7-94, Computer Systems Group, Dept. of Computer Science, The University of Edinburgh, The King's Buildings, Edinburgh EH9 3JZ, December 1994.

[142] S. Gilmore, J. Hillston, R. Holton, and M. Rettelbach. Specifications in stochastic process algebra for a robot control problem. *International Journal of Production Research*, 1995. To appear.

[143] N. Götz. *Stochastic Process Algebas — Integration of Functional Design and Performance Evaluation of Distributed Systems.* PhD thesis, Universität Erlangen-Nürnberg, May 1994. Stochastische Prozeßalgebren (in German).

[144] N. Götz, H. Hermanns, U. Herzog, V. Mertsiotakis, and M. Rettelbach. Stochastic process algebras; constructive specification techniques - integrating functional, performance and dependability aspects. In F. Baccelli, A. Jean-Marie, and I. Mitrani, editors, *Quantitative Models in Parallel Systems*, pages 3–17. Springer, Berlin, 1995.

[145] N. Götz, U. Herzog, and M. Rettelbach. Multiprocessor and distributed system design: The integration of functional specification and performance analysis using stochastic process algebras. In *Proc. of the 16th International Symposium on Computer Performance Modelling, Measurement and Evaluation, PERFORMANCE '93*, number 729 in LNCS. Springer Verlag, 1993. Tutorial; also in [148].

[146] N. Götz, U. Herzog, and M. Rettelbach, editors. *Proceedings of the QMIPS workshop on Formalisms — Principles and State-of-the-Art*, volume 26 of *Arbeitsberichte des IMMD*. University of Erlangen, September 1993.

[147] N. Götz, U. Herzog, and M. Rettelbach. TIPP — an overview. In J. Hillston and R. Pooley, editors, *Proceedings of the Workshop on Process Algebra and Performance Evaluation*, University of Edinburgh, 1993. Computer Science Report CSR-26-93.

[148] N. Götz, U. Herzog, and M. Rettelbach. TIPP — introduction and application to protocol performance analysis. In *Formale Beschreibungstechniken für Verteilte Systeme*, FOKUS series. Sauer publishers, Munich, 1993.

[149] N. Götz, U. Herzog, and M. Rettelbach. TIPP - a stochastic process algebra. In J. Hillston and F. Moller, editors, *Proceeding of the Workshop on Process Algebras and Performance Modelling*, number CSR-26-93 in Computer Science Report. University of Edinburgh, Department of Computer Science, May 1993.

[150] Z.N. Grant-Duff and P.G. Harrison. Parallelism via homomorphisms. *Parallel Processing Letters*, 1996.

[151] QMIPS groups in UTO and ZAR. The timed (coloured) Petri net formalism: Position paper. In *Workshop on Formalisms, Principles and State-of-the-Art*, number 14 in Band 26, pages 3–60. Arbeitsberichte des Instituts für Mathematische Maschinen und Datenverarbeitung (Informatik), Erlangen, Germany, 1993.

[152] P.G. Harrison and C. A.de Pinto. Response time distributions in packet-switched banyan networks. In *Proc. 2nd Workshop on Performance Modelling and Evaluation of ATM Networks*, Bradford, July 1994. Extended version in D. Kouvatsos (ed.), Performance Modelling and Evaluation of ATM networks, Chapman-Hall, 1995.

[153] P.G. Harrison and A. de C. Pinto. An approximate analysis of asynchronous, packet-switched, buffered banyan networks with blocking. *Performance Evaluation*, 1994.

[154] P.G. Harrison and J.E. Hillston. Exploiting quasi-reversible structures in markovian process algebra models. In *Proc. PAPM, Edinburgh*, June 1995. Extended version in *Computer Journal*, 1996.

[155] P.G. Harrison, N.M. Patel, and E. Pitel. Negative customers model queues with breakdowns. In *Proc. UK Performance Engineering Workshop*, Workshop Series, Liverpool, September 1995. Springer-Verlag.

[156] P.G. Harrison and E. Pitel. Response time distributions in queueing network models. In *Performance'93*, LNCS, Rome, 1993. Springer Verlag. State of the art tutorial.

[157] P.G. Harrison and E. Pitel. Sojourn times in single server queues with negative customers. *J. Appl. Prob*, 1993.

[158] P.G. Harrison and E. Pitel. $m/g/1$ queues with negative arrivals: an iteration to solve a fredholm integral equation of the first kind. In *MASCOTS '95*, North Carolina, 1995.

[159] P.G. Harrison and E. Pitel. Response time distributions in tandem G-networks. *J. Appl. Prob*, 1995. To appear.

[160] P.G. Harrison and E. Pitel. The $M/G/1$ queue with negative customers. *Adv. Appl. Prob.*, 1996. Presented at Cambridge University Workshop on Stochastic Models, December 1993 and at a University of Edinburgh Research Colloquium, April 1994.

[161] H. Hermanns. *Semantics of Process Languages for Performance Evaluation.* Diploma thesis, University of Erlangen, November 1993. Semantik von Prozeßsprachen zur Leistungsbewertung (in german).

[162] H. Hermanns. Leistungsvorhersage von verhaltensbeschreibungen mittels temporaler logik. In Reinhard Gotzhein and Jan Bredereke, editors, *Formale Beschreibungstechniken für verteilte Systeme.* Universität Kaiserslautern, Fachbereich Informatik, 1995.

[163] H. Hermanns. Performance prediction of behavioural descriptions with temporal logics, September 1995. Extended Abstract, QMIPS Deliverable D3.

[164] H. Hermanns, U. Herzog, J. Hillston, V. Mertsiotakis, and M. Rettelbach. Stochastic Process Algebras: Integrating Qualitative and Quantitative Modelling. Technical Report 11/94, Universität Erlangen–Nürnberg, IMMD VII, Martensstr. 3, 91058 Erlangen, May 1994.

[165] H. Hermanns, U. Herzog, J. Hillston, V. Mertsiotakis, and M. Rettelbach. Stochastic process algebras: Integrating qualitative and quantitative modelling. In *Proc. of the 7th International Conference on Formal Description Techniques (FORTE '94)*, Bern, October 1994. Extended Abstract.

[166] H. Hermanns, U. Herzog, and V. Mertsiotakis. Stochastic process algebras as a tool for performance and dependability modelling. In *Proc. of IEEE International Computer Performance and Dependability Symposium*, Erlangen, April 1995. IEEE Computer Society Press.

[167] H. Hermanns and V. Mertsiotakis. A stochastic process algebra based modelling tool. In *Proc. of the 11th U.K. Performance Engineering Workshop for Computer and Telecommunication Systems.* Springer, 1995.

[168] H. Hermanns and M. Rettelbach. Syntax, semantics, equivalences and axioms for MTIPP. In U. Herzog and M. Rettelbach, editors, *Proceedings of the 2nd Workshop on Process Algebra and Performance Modelling*, University of Erlangen-Nürnberg, IMMD, Martensstr. 3, D-91085 Erlangen, November 1994.

[169] H. Hermanns, M. Rettelbach, and T. Weiß. Formal characterisation of immediate actions in an spa with non-deterministic branching. In S. Gilmore and J. Hillston, editors, *Proceedings of the 3rd Workshop on Process Algebra and Performance Modelling*, Edinburgh, June 1995. Springer. To appear in The Computer Journal.

[170] U. Herzog. Constructive modeling and design – Basic research within the european QMIPS–project. In *Proc. 5th International Workshop of Petri Nets/Performance Models (PNPM'93)*, Toulouse, France, October 1993. IEEE CS-Press. Invited Talk.

[171] U. Herzog. Constructive modeling and design – basic research within the european QMIPS–project. In *Minisymposium on Performance and Parallel Processing*, University of Vienna, Austria, December 1993.

[172] U. Herzog and M. Rettelbach, editors. *Proceedings of the 2nd Workshop on Process Algebra and Performance Modelling*, Martensstr. 3, D-91085 Erlangen, November 1994. University of Erlangen-Nürnberg, IMMD.

[173] J. Hillston and V. Mertsiotakis. A simple time scale decomposition technique for stochastic process algebras. In S. Gilmore and J. Hillston, editors, *Proceedings of the 3rd Workshop on Process Algebra and Performance Modelling*, Edinburgh, June 1995. Springer. To appear in The Computer Journal.

[174] A. Hordijk and G.M. Koole. On the optimality of LEPT and $c\mu$ rules for parallel processors and dependent arrival processes. *Adv. Appl. Probab*, 25:979–996, 1993.

[175] A. Hordijk, G.M. Koole, and J.A. Loeve. Analysis of a customer assignment model with no state information. Technical Report TW-93-15, Leiden University, 1993.

[176] A. Jean-Marie. The waiting time distribution in systems with poisson inputs and known services. In preparation.

[177] A. Jean-Marie. Computing transient and stationary measures for discrete event systems. In *ORSA/ TIMS Applied Probability Conference*, Paris, June 1993.

[178] A. Jean-Marie. 'analytical computation of lyapunov exponents in stochastic event graphs. In O.J. Boxma and G. Koole, editors, *Performance Evaluation of Parallel and Distributed Systems*, number 105 and 106 in CWI Tracts, pages 1–21. CWI, Amsterdam, 1994.

[179] A. Jean-Marie and O.J. Olsder. Analysis of stochastic min-max systems: Results and conjectures. *Mathematical and Computer modelling*, 1993. Special issue on Discrete Event Systems, to appear.

[180] G. Koole. Assigning a single server to inhomogeneous queues with switching costs. Technical Report BS-R9405, CWI, 1994.

[181] G. Koole. On the power series algorithm. Technical Report BS-R9404, CWI, 1994. Also in *Proc. QMIPS Torino Workshop*, CWI Tracts #105–106, pp. 139–155, 1994.

[182] G. Koole. Optimal repairman assignment in two maintenance models which are equivalent to routing with early decisions. *EJOR*, pages 295–301, 1995.

[183] G.M. Koole. On the optimality of FCFS for networks of multi-server queues. Technical Report BS-R9235, CWI, 1992.

[184] A. Labed, S. Chabridon, M. Hernández, and E. Gelenbe. A solver for G-networks. Technical report, EHEI, University Paris V, October 1995.

[185] Z. Liu and J. Resing. Duality and equivalencies in closed tandem queueing networks. submitted to *Queueing Systems.* INRIA Report RR 2115, 1994, 1993.

[186] Z. Liu and D. Towsley. The effect of service discipline in $G/GI/s$ queueing systems. *The Annals of OR*, 48:401–420, 1994.

[187] Z. Liu and D. Towsley. Optimality of the round robin routing policy. *Journal Applied Probabilities*, 31:466–475, June 1994.

[188] J. Mairesse. Products of irreducible random matrices in the (max,+) algebra - Part I. Technical Report 1939, INRIA, 1993. To appear in *JAP*, 1995.

[189] J. Mairesse. A graphical representation for matrices in the (max,+) algebra. *IEEE Trans. Automatic Control*, September 1995. INRIA Report RR 2078, 1993.

[190] J. Mairesse. *Stabilité des systèmes à événements discrets stochastiques.* PhD thesis, École polytechnique, Palaiseau, June 1995.

[191] V. Mertsiotakis and M. Silva. Response time approximation for decision-free TIPP specifications. Technical Report 15/95, IMMD VII, Universität Erlangen, 1995.

[192] I. Mitrani. The spectral expansion solution method for markov processes on lattice strips. *Advances in Queueing*, 1995.

[193] I. Mitrani and R.. Chakka. Heterogeneous multiprocessor systems with breakdowns: Performance and optimal repair strategies. *Theoretical Computer Science*, 1993. To appear.

[194] I. Mitrani and R. Chakka. Spectral expansion solution for a class of Markov models: application and comparison with the matrix-geometric method. *Performance Evaluation*, 23(3), 1995.

[195] I. Mitrani, A. Ost, and M. Rettelbach. TIPP and the spectral expansion method. In Baccelli F., A. Jean-Marie, and I. Mitrani, editors, *Quantitative Models in Parallel Systems*, pages 99–113. Springer, Berlin, 1995.

[196] I. Mitrani and A. Puhalskii. Limiting results for multiprocessor systems with breakdowns and repairs. *Queueing Systems*, 14:293–311, 1993.

[197] I. Mitrani and A. Puhalskii. Queues with breakdowns. In *2nd Intl. Workshop on Performability Modeling of Computer and Communication Systems*, Mont St Michel, 1993.

[198] I. Mitrani and P.E. Wright. Dispatching policy in a transportation network. QMIPS Workshop., 1994.

[199] I. Mitrani and P.E. Wright. On the interaction of unreliable routes. In F.P. Kelly, editor, *Probability, Statistics and Optimization*, chapter 9. Wiley, 1994.

[200] I. Mitrani and P.E. Wright. Routing in the presence of breakdowns. *Performance Evaluation*, 20:151–164, 1994.

[201] A. Ost. TIPP and the spectral expansion method. Master's thesis, Universität Erlangen-Nürnberg, IMMD VII, May 1995. In German.

[202] C.J. Pérez-Jiménez, J. Campos, and M. Silva. On approximate throughput computation of deterministic systems of sequential processes. Technical Report GISI RR-95-03, DISI, Centro Politénico Superior, Universidad de Zaragoza, March 1995.

[203] C.J. Pérez-Jiménez, J. Campos, and M. Silva. State machine reduction for the approximate performance evaluation of manufacturing systems modelled with cooperating sequential processes. Technical Report RR-95-07, DISI, Centro Politénico Superior, Universidad de Zaragoza, September 1995. Submitted for publication.

[204] A. Pinto, de C. and P.G. Harrison. An approximation for end-to-end delay distributions in buffered multistage interconnection networks. In *Proc. Intl. Conf. on Local and Metropolitan Communication Systems*, Kyoto, December 1994.

[205] A. Pinto, de C., P.G. Harrison, and D.D. Kouvatsos. Finite buffered banyan networks with large crossbars. In *Proc. 3rd International Workshop on Performance Modelling and Evaluation of ATM Networks*, Ilkley, July 1995.

[206] L. Recalde. A modular and recursively defined class of models of concurrent systems: $\{SC\}^E CS$. Master's thesis, University of Zaragoza, Spain, September 1995.

[207] L. Recalde, E. Teruel, and M. Silva. On well-formedness analysis: The case of deterministic systems of sequential processes. In J. Desel, editor, *Proc. STRICT '95*. Springer Verlag, 1995. To appear.

[208] M. Rettelbach. *Immediate and Probabilistic Activities in Stochastic Process Algebras.* PhD thesis, Uiversity Erlangen-Nürnberg, 1995. In German.

[209] M. Rettelbach. Probabilistic branching in markovian process algebras. In S. Gilmore and J. Hillston, editors, *Proceedings of the 3rd Workshop on Process Algebra and Performance Modelling*, Edinburgh, June 1995. Springer. To appear in The Computer Journal.

[210] M. Rettelbach and M. Siegle. Compositional minimal semantics for the stochastic process algebra TIPP. In U. Herzog and M. Rettelbach, editors, *Proc. 2nd Workshop on Process Algebra and Performance Modelling.* University of Erlangen-Nürnberg, IMMD, November 1994.

[211] M. Ribaudo. On the aggregation techniques in stochastic Petri nets and stochastic process algebras. In S. Gilmore and J. Hillston, editors, *Proceedings of the 3rd Workshop on Process Algebra and Performance Modelling*, Edinburgh, June 1995. Springer. The Computer Journal, Vol. 36 (6).

[212] M. Ribaudo. Stochastic Petri net semantics for stochastic process algebras. In *Proc. 6th International Workshop on Petri Nets and Performance Models*, Durham, NC, 1995.

[213] B. Sánchez. Throughput of transitions and free choice decomposition into T-components. In *Proc. 5th International Workshop of Petri Nets/Performance Models (PNPM'93)*, pages 20–22, Toulouse, France, October 1993.

[214] B. Sánchez and M. Silva. Monotonicity results for stochastic weighted T-systems. Draft report, September 1993.

[215] M. Sereno. Approximate mean value analysis technique for non-product form solution stochastic Petri nets: an application to stochastic marked graphs. In *Proc. 6th International Workshop on Petri Nets and Performance Models*, Durham, NC, 1995.

[216] M. Sereno. Towards a product form solution for stochastic process algebras. In S. Gilmore and J. Hillston, editors, *Proceedings of the 3rd Workshop on Process Algebra and Performance Modelling*, Edinburgh, June 1995. Springer. The Computer Journal, Vol. 36 (6).

[217] M. Sereno and G. Balbo. Computational algorithms for product form solution stochastic Petri nets. In *Proc. 5th International Workshop of Petri Nets/Performance Models (PNPM'93)*, Toulouse, France, October 1993.

[218] M. Sereno and G. Balbo. Mean value analysis of stochastic Petri nets. Technical report, University of Torino, September 1993.

[219] M. Sereno, G. Balbo, and S. Bruell. Arrival theorems for product-form stochastic Petri nets. In *1994 ACM SIGMETRICS Conference*, Nashville, Tennessee, May 1994.

[220] M. Siegle. *Description and Analysis of Markov Models with Large State Space.* PhD thesis, Universität Erlangen-Nürnberg, 1995. In German.

[221] M. Silva. Interleaving functional and performance structural analysis of net models. In M. Ajmone Marsan, editor, 14^{th} *International Conference on Application and Theory of Petri Nets*, number 691 in LNCS, Chicago, Illinois, June 1993. Springer Verlag.

[222] M. Silva and J. Campos. Performance models based on Petri nets. In *Proceedings of the IMACS/IFAC Second International Symposium on Mathematical and Intelligent Models in System Simulation*, pages xiv–xxi, Brussels, Belgium, April 1993. Invited paper.

[223] M. Silva and J. Campos. Structural performance analysis of stochastic Petri nets. In *Proceedings of the IEEE International Computer Performance and Dependability Symposium*, pages 61–70, Erlangen, Germany, April 1995. IEEE-Computer Society Press. Invited paper.

[224] M. Silva and E. Teruel. Analysis of autonomous Petri nets with bulk services and arrivals. In G. Cohen and J.P. Quadrat, editors, 11^{th} *International Conference on Analysis and Optimization of Systems: Discrete Event Systems*, volume 199 of *Lecture Notes in Control and Information Sciences*, pages 131–143169–175. Springer-Verlag, London, 1994.

[225] B. Strulo, D.M. Gabbay, and P. Harrison. Temporal logic in a stochastic environment. In L. Bolk and A. Szalas, editors, *Time and Logic*, Artificial Intelligence Series. UCL Press, 1994.

[226] D. Strulo. *Process Algebra for Discrete Event Simulation.* PhD thesis, Imperial College, Univ. London, 1993.

[227] R. Studt. Syntactical and semantical analysis of TIPP processes. Technical report, University of Erlangen-Nürnberg, 1995. In German.

[228] E. Teruel, J.M. Colom, and M. Silva. Linear analysis of deadlock-freeness of Petri net models. In *Proc. 2nd European Control Conference*, pages 513–518. North-Holland, 1993.

[229] E. Teruel, J.M. Colom, and M. Silva. Deterministic concurrent systems with bulk services and arrivals. Research Report RR-95-04, DISI, Centro Politénico Superior, Universidad de Zaragoza, May 1995.

[230] E. Teruel and M. Silva. Liveness and home state in Equal Conflict systems. In Ajmone Marsan, editor, *Application and Theory of Petri Nets 1993*, volume 691 of *Lecture Notes in Computer Science*, pages 415–432. Springer-Verlag, 1993.

[231] E. Teruel and M. Silva. Well-formedness of Equal Conflict systems. In R. Valette, editor, *Application and Theory of Petri Nets 1994*, volume 815 of *Lecture Notes in Computer Science*, pages 491–510. Springer-Verlag, Berlin, 1994.

[232] E. Teruel and M. Silva. Structure theory of Equal Conflict systems. *Theoretical Computer Science (to appear)*, 1995. Research Report GISI-RR-93-22, Departamento de Ingeniería Eléctrica e Informática, Universidad de Zaragoza, Spain, November 1993.

[233] E. Teruel, M. Silva, J.M. Colom, and J. Campos. Functional and performance analysis of cooperating sequential processes. In G. Cohen and J.P. Quadrat, editors, 11^{th} *International Conference on Analysis and Optimization of Systems: Discrete Event Systems*, volume 199 of *Lecture Notes in Control and Information Sciences*, pages 169–175. Springer-Verlag, London, 1994.

[234] N. Thomas and I. Mitrani. Routing among different nodes where servers break down without losing jobs. In *Procs. IPDS'95*, Erlangen, 1995. Also in *Quantitative Models in Parallel Systems.*

[235] M. Tilgner and M. Silva. Approximate performance analysis on Petri net based models of manufacturing systems. In *1994 IEEE International Conference on Robotics and Automation*, San Diego, California, May 1994.

[236] T. Weiß. Congruence investigations for the integration of immediate actions into stochastic process algebras. Technical report, University of Erlangen-Nürnberg, 1995. In German.