

Publications  
J. Michael Harrison  
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BOOKS

- [1] **Brownian Motion and Stochastic Flow Systems** (1985), John Wiley and Sons, New York.

ARTICLES

- [1] Discrete Dynamic Programming with Unbounded Rewards (1972), **Annals of Mathematical Statistics**, Vol. 43, 636-644.
- [2] Assembly-Like Queues (1973), **J. of Applied Probability**, Vol. 10, 354-367.
- [3] The Heavy Traffic Approximation for Single Server Queues in Series (1973), **J. of Applied Probability**, Vol. 10, 613-629.
- [4] A Limit Theorem for Priority Queues in Heavy Traffic (1973), **J. of Applied Probability**, Vol. 10, 907-912.
- [5] A Priority Queue with Discounted Linear Costs (1975), **Operations Research**, Vol. 23, 260-269.
- [6] Dynamic Scheduling of a Multi-Class Queue: Discount Optimality (1975), **Operations Research**, Vol. 23, 270-282.
- [7] A Diffusion Approximation for the Ruin Function of a Risk Process with Compounding Assets (1975), with D. C. Emanuel and A. J. Taylor, **Scandinavian Actuarial J.**, Vol. 58, 240-247.
- [8] Dynamic Scheduling of a Two-Class Queue: Small Interest Rates (1976), **SIAM J. on Applied Math.**, Vol. 31, 51-61.
- [9] On the Virtual and Actual Waiting Time Distributions of a GI/G/1 Queue (1976), with A. J. Lemoine, **J. of Applied Probability**, Vol. 13, 833-836.
- [10] The Stationary Distribution and First Exit Probabilities of a Storage Process with General Release Rule (1976), with S. I. Resnick, **Math. of Operations Research**, Vol. 1, 347-358.

- [11] Ruin Problems with Compounding Assets (1977), **Stochastic Processes and their Applications**, Vol. 5, 67-79.
- [12] Some Stochastic Bounds for Dams and Queues (1977), **Math. of Operations Research**, Vol. 2, 54-63.
- [13] The Supremum Distribution of a Levy Process with no Negative Jumps (1977), **Advances in Applied Probability**, Vol. 9, 417-422.
- [14] Limit Theorems for Periodic Queues (1977), with A. J. Lemoine, **J. of Applied Probability**, Vol. 14, 566-576.
- [15] Independence and Calibration in Decision Analysis (1977), **Management Science**, Vol. 24, 320-328.
- [16] Speculative Investor Behavior in a Stock Market with Heterogeneous Expectations (1978), with D. M. Kreps, **Quarterly J. of Economics**, Vol. XCII, 323-336.
- [17] Optimal Control of Brownian Storage System (1978), with A. J. Taylor, **Stochastic Processes and their Applications**, Vol. 6, 179-194.
- [18] The Recurrence Classification of Risk and Storage Processes (1978), with S. I. Resnick, **Math. of Operations Research**, Vol. 3, 57-66.
- [19] The Diffusion Approximation for Tandem Queues in Heavy Traffic (1978), **Advances in Applied Probability**, Vol. 10, 886-905.
- [20] Martingales and Arbitrage in Multi-Period Securities Markets (1979), with D. M. Kreps, **J. of Economic Theory**, Vol. 20, 381-408.
- [21] Reflected Brownian Motion on an Orthant (1981), with M. I. Reiman, **Annals of Probability**, Vol. 9, 302-308.
- [22] On Skew Brownian Motion (1981), with L. A. Shepp, **Annals of Probability**, Vol. 9, 309-313.
- [23] Sticky Brownian Motion as the Limit of Storage Processes (1981), with A. J. Lemoine, **J. of Applied Probability**, Vol. 18, 216-226.
- [24] A Note on Networks of Infinite-Server Queues (1981), with A. J. Lemoine, **J. of Applied Probability**, Vol. 18, 561-567.
- [25] On the Distribution of Multidimensional Reflected Brownian Motion (1981), with M. I. Reiman, **SIAM J. on Applied Math.**, Vol. 41, 345-361.

- [26] Martingales and Stochastic Integrals in the Theory of Continuous Trading (1981), with S. R. Pliska, **Stochastic Processes and their Applications**, Vol. 11, 215-260.
- [27] Instantaneous Control of Brownian Motion (1982), with M. I. Taksar **Math. of Operations Research**, Vol. 8, 439-453.
- [28] Impulse Control of Brownian Motion (1982), with T. L. Sellke and A. J. Taylor, **Math. of Operations Research**, Vol. 8, 454-466.
- [29] A Stochastic Calculus Model of Continuous Trading: Complete Markets (1983), with S. R. Pliska, **Stochastic Processes and Their Applications**, Vol. 15, 313-316.
- [30] A Tandem Storage System and its Diffusion Limit (1984), with L. A. Shepp, **Stochastic Processes and Their Applications**, Vol. 16, 257-274.
- [31] Optimal Funding and Asset Allocation Rules for Defined-Benefit Pension Plans (1983), with W. F. Sharpe, in Z. Bodie and J. Shoven (eds.), **Financial Aspects of the U.S. Pension System**, National Bureau of Economic Research, U. of Chicago Press, 91-106.
- [32] Continuous Price Processes in Frictionless Markets Have Unbounded Variation (1984), with R. Pitbladdo and S. M. Schaefer, **J. of Business**, Vol. 57, 353-366.
- [33] The Stationary Distribution of Reflected Brownian Motion in a Planar Region (1985), with H. Landau and L. A. Shepp, **Annals of Probability**, Vol. 13, 744-757.
- [34] Multidimensional Reflected Brownian Motions Having Exponential Stationary Distributions (1987), with R. J. Williams, **Annals of Probability**, Vol. 15, 115-137.
- [35] Brownian Models of Open Queueing Networks with Homogeneous Customer Populations (1987), with R. J. Williams, **Stochastics**, Vol. 22, 77-115.
- [36] Brownian Models of Queueing Networks with Heterogeneous Customer Populations (1988), in W. Fleming and P.-L. Lions (eds.), **Stochastic Differential Systems, Stochastic Control Theory and Applications**, IMA Volumes in Mathematics and its Applications, Volume 10, 147-186, Springer-Verlag, New York, 1988.
- [37] Empirical Validation of a Queueing Network Model for Semiconductor Wafer Fabrication (1988), with H. Chen, A. Mandelbaum, A. van Ackere and L. M. Wein, **Operations Research**, Vol. 36, 202-215.

- [38] Brownian Models of Closed Queueing Networks with Homogeneous Customer Populations, with R. J. Williams and H. Chen, **Stochastics**, Vol. 29 (1990), 37-74.
- [39] Scheduling Networks of Queues: Heavy Traffic Analysis of a Two-Station Closed Network, with L. M. Wein, **Operations Research**, Vol. 38 (1990), 1052-1064.
- [40] On the Quasireversibility of a Multiclass Brownian Service Station, with R. J. Williams, **Annals of Probability**, Vol. 18 (1990), 1249-1268.
- [41] Scheduling Networks of Queues: Heavy Traffic Analysis of a Simple Open Network, with L. M. Wein, **Queueing Systems**, Vol. 5 (1989), 265-280.
- [42] Measuring Delivery Performance: A Case Study from the Semiconductor Industry, with C. A. Holloway and J. M. Patell, in R. Kaplan (ed.), **Measuring Manufacturing Performance**, Harvard Business School Press, Boston, MA, 1990, 309-351.
- [43] The QNET Method for Two-Moment Analysis of Open Queueing Networks, with V. Nguyen, **Queueing Systems**, Vol. 6 (1990), 1-32.
- [44] Steady-State Analysis of RBM in a Rectangle: Numerical Methods and a Queueing Application, with J. G. Dai, **Annals of Applied Probability**, Vol. 1 (1991), 15-35.
- [45] Reflected Brownian Motion in an Orthant: Numerical Methods for Steady-State Analysis, with J. G. Dai, **Annals of Applied Probability**, Vol. 2 (1992), 65-86.
- [46] Brownian Models of Feedforward Queueing Networks: Quasireversibility and Product Form Solutions, with R. J. Williams, **Annals of Applied Probability**, Vol. 2 (1992), 263-293.
- [47] Brownian Models of Multiclass Queueing Networks: Current Status and Open Problems, with V. Nguyen, **Queueing Systems**, Vol. 13 (1993), 5-40.
- [48] The QNET Method for Two-Moment Analysis of Closed Manufacturing Systems, with J. G. Dai, **Annals of Applied Probability**, Vol. 3 (1993), 968-1012.
- [49] Arbitrage Pricing of Russian Options and Perpetual Lookback Options, with J. D. Duffie, **Annals of Applied Probability**, Vol. 3 (1993), 641-651.
- [50] Two-Moment Analysis of Open Queueing Networks with General Workstation Capabilities, with M. T. Pich, **Operations Research**, Vol. 44 (1996), 936-950.

- [51] Balanced Fluid Models of Multiclass Queueing Networks: A Heavy Traffic Conjecture, in F. P. Kelly and R. J. Williams (eds.), **Stochastic Networks**, IMA Volumes in Mathematics and its Applications, Volume 71, 1-20, Springer-Verlag, New York, 1995.
- [52] Some Badly Behaved Closed Queueing Networks, with V. Nguyen, in F. P. Kelly and R. J. Williams (eds.), **Stochastic Networks**, IMA Volumes in Mathematics and its Applications, Volume 71, 117-124, Springer-Verlag, New York, 1995.
- [53] A Multiclass Closed Queueing Network with Unconventional Heavy Traffic Behavior, with R. J. Williams, **Annals of Applied Probability**, Vol. 6 (1996), 1-47.
- [54] The BIGSTEP Approach to Flow Management in Stochastic Processing Networks, in F. P. Kelly, I. Ziedins and S. Zachary (eds.), **Stochastic Networks: Theory and Applications**, 57-90, Oxford University Press, 1996.
- [55] Dynamic Control of Brownian Networks: State Space Collapse and Equivalent Workload Formulations, with J. A. Van Mieghem, **Annals of Applied Probability**, Vol. 7 (1997), 747-771.
- [56] Heavy Traffic Analysis of a System with Parallel Servers: Asymptotic Analysis of Discrete-Review Policies, **Annals of Applied Probability**, Vol. 8 (1998), 822-848.
- [57] Multi-Resource Investment Strategies: Operational Hedging in a Generalized Newsvendor Model, with J. A. Van Mieghem, **European Journal of Operational Research**, Vol. 113 (1999), 17-29.
- [58] Heavy Traffic Resource Pooling in Parallel-Server Systems, with M. J. Lopez, **Queueing Systems**, Vol. 33 (1999), 339-368.
- [59] Brownian Models of Open Processing Networks: Canonical Representation of Workload, **Annals of Applied Probability**, Vol. 10 (2000), 75-103. Correction Vol. 13 (2003), 390-393.
- [60] Dynamic Control of a Queue with Adjustable Service Rate, with J. M. George, **Operations Research**, Vol. 49 (2001), 720-731.
- [61] A Multiclass Queue in Heavy Traffic with Throughput Time Constraints: Asymptotically Optimal Dynamic Controls, with E. L. Plambeck and S. Kumar, **Queueing Systems**, Vol. 39 (2001), 23-54.
- [62] Stochastic Networks and Activity Analysis, in Yu. Suhov (ed.), **Analytic Methods in Applied Probability. In Memory of Fridrih Karpelevich**.

- American Mathematical Society, Providence, RI (2002), 53-76.
- [63] A Broader View of Brownian Networks, **Annals of Applied Probability**, Vol. 13 (2003), 1119-1150.
  - [64] Dynamic Scheduling of a Multi-Class Queue in the Halfin-Whitt Heavy Traffic Regime, with A. Zeevi, **Operations Research**, Vol. 52 (2004), 243-257.
  - [65] Drift Rate Control of a Brownian Processing System, with B. Ata and L. A. Shepp, **Annals of Applied Probability**, Vol. 15 (2005), 1145-1160.
  - [66] A Method for Staffing Large Call Centers Based on Stochastic Fluid Models, with A. Zeevi, **Manufacturing and Service Operations Management**, Vol. 7 (2005), 20-36.
  - [67] Workload Reduction of a Generalized Brownian Network, with R. J. Williams, **Annals of Applied Probability**, Vol. 15 (2005), 2255-2295.
  - [68] Dynamic Routing and Admission Control in High-Volume Service Systems: Asymptotic Analysis via Multi-Scale Fluid Limits, with A. Bassamboo and A. Zeevi, **Queueing Systems**, Vol. 51 (2005), 249-285.
  - [69] Design and Control of a Large Call Center: Asymptotic Analysis of an LP-Based Method, with A. Bassamboo and A. Zeevi, **Operations Research**, Vol. 54 (2006), 419-435.
  - [70] Pointwise Stationary Fluid Models for Stochastic Processing Networks, with A. Bassamboo and A. Zeevi, **Manufacturing and Service Operations Management**, to appear.
  - [71] Workload Interpretation for Brownian Models of Stochastic Processing Networks, with R. J. Williams, **Mathematics of Operations Research**, to appear.
  - [72] Reflected Brownian motion in the quadrant: Tail behavior of the stationary distribution, with John Hasenbein, submitted to **Queueing Systems** 2007.
  - [73] Reflecting Brownian motion in the orthant: An illuminating example of instability, with J. G. Dai, submitted to **Mathematics of Operations Research** 2007.