DVANCES NAPPLE PROBABILITY

INCLUDING A SECTION ON

STOCHASTIC GEOMETRY AND STATISTICAL APPLICATIONS

VOLUME 36 NUMBER 4

DECEMBER 2004



Advances in Applied Probability

This is a companion publication to the *Journal of Applied Probability* published by the Applied Probability Trust. It contains reviews and expository papers in applied probability, as well as mathematical and scientific papers of interest to probabilists, letters to the editor and a section devoted to stochastic geometry and statistical applications (SGSA). An annual volume of up to 1200 pages is published in four issues appearing in March, June, September and December.

EDITORIAL BOARD

Editor-in-Chief C. C. HEYDE (Columbia University and Australian National

University)

Coordinating Editors N. H. BINGHAM (University of Sheffield)

I. MOLCHANOV SGSA (Universität Bern)

M. F. NEUTS (University of Arizona)

Editors R. J. ADLER (Technion, Haifa)

R. AMBARTZUMIAN SGSA (National Academy of Sciences

of Armenia)

A. J. BADDELEY SGSA (University of Western Australia)

P. BRÉMAUD (ENS, Paris, and EPFL, Lausanne)

C. CANNINGS (University of Sheffield)

E. ÇINLAR (Princeton University)

R. COWAN SGSA (University of Sydney)

D. J. DALEY (Australian National University)

P. J. DONNELLY (University of Oxford)

P. EMBRECHTS (ETH, Zürich)

A. HORDIJK (Universiteit Leiden)

P. JAGERS (Chalmers University of Technology and Göteborgs

Universitet)

S. JANSON (Uppsala Universitet)

W. S. KENDALL SGSA (University of Warwick)

G. KERSTING (Johann Wolfgang Goethe-Universität,

Frankfurt am Main)

J. F. C. KINGMAN (Isaac Newton Institute, Cambridge)

C. KLÜPPELBERG (Technische Universität München)

T. MIKOSCH (Københavns Universitet)

S. I. RESNICK (Cornell University)

L. C. G. ROGERS (University of Cambridge)

D. STOYAN SGSA (Bergakademie Freiberg)

J. L. TEUGELS (Katholieke Universiteit Leuven)

E. B. VEDEL JENSEN SGSA (Aarhus Universitet)

D. VERE-JONES SGSA (Victoria University of Wellington)

R. A. VITALE SGSA (University of Connecticut)

R. R. WEBER (University of Cambridge)

W. WEIL SGSA (Universität Karlsruhe)

W. WHITT (Columbia University)

EDITORIAL OFFICE

Executive Editor Production Editor L. J. NASH (University of Sheffield)

D. J. WINTERS (University of Sheffield)

All correspondence relating to the submission of papers should be sent to: The Executive Editor, Applied Probability, School of Mathematics and Statistics, University of Sheffield, Sheffield S3 7RH, UK. Subscription rates and notes for contributors are to be found on the inside back cover.

CONTENTS

Volume 36 Number 1

Stochastic Geometry and Statistical Applications

- 1 SIVA ATHREYA, RAHUL ROY AND ANISH SARKAR. On the coverage of space by random sets
- 19 ABHAY G. BHATT AND RAHUL ROY. On a random directed spanning tree
- 43 ANUJ SRIVASTAVA AND ERIC KLASSEN. Bayesian and geometric subspace tracking

- A. BOBROWSKI. Quasi-stationary distributions of a pair of Markov chains related to time evolution of a DNA locus
- 78 M. MÖHLE. The time back to the most recent common ancestor in exchangeable population models
- JAMES U. GLEATON AND JAMES D. LYNCH. On the distribution of the breaking strain of a bundle of brittle elastic fibers
- 116 YONIT BARRON, ESTHER FROSTIG AND BENNY LEVIKSON. Analysis of *R*-out-of-*N* repairable systems: the case of phase-type distributions
- 139 HYUN-SOO AHN, IZAK DUENYAS AND RACHEL Q. ZHANG. Optimal control of a flexible server
- 171 CÉLINE LACAUX. Series representation and simulation of multifractional Lévy motions
- 198 ASSAF ZEEVI AND PETER W. GLYNN. Estimating tail decay for stationary sequences via extreme values
- 227 A. A. BOROVKOV AND A. HORDIJK. Characterization and sufficient conditions for normed ergodicity of Markov chains
- 243 SØREN F. JARNER AND WAI KONG YUEN. Conductance bounds on the L^2 convergence rate of metropolis algorithms on unbounded state spaces
- ANYUE CHEN, HANJUN ZHANG, KAI LIU AND KEITH RENNOLLS. Birth–death processes with disaster and instantaneous resurrection
- 293 NICHOLAS BAMBOS AND GEORGE MICHAILIDIS. Queueing and scheduling in random environments
- 318 LAURA M. MORATO AND PAOLA SIRI. Addendum to 'A stochastic algorithm to compute optimal probabilities in the chaos game': a new convergence criterion
- 324 Correction

Volume 36 Number 2

Stochastic Geometry and Statistical Applications

- 325 CODINA COTAR AND STANISLAV VOLKOV. A note on the lilypond model
- 340 ANTONIO CUEVAS AND ALBERTO RODRÍGUEZ-CASAL. On boundary estimation

- 355 KALYAN CHATTERJEE AND SUSAN H. XU. Technology diffusion by learning from neighbours
- 377 ESTHER FROSTIG. Upper bounds on the expected time to ruin and on the expected recovery time
- 398 STEPHEN M. SAMUELS. Why do these quite different best-choice problems have the same solutions?
- 417 MARIA DE IORIO AND ROBERT C. GRIFFITHS. Importance sampling on coalescent histories. I
- 434 MARIA DE IORIO AND ROBERT C. GRIFFITHS. Importance sampling on coalescent histories. II: Subdivided population models
- 455 JEAN-BERNARD GRAVEREAUX AND JAMES LEDOUX. Poisson approximation for some point processes in reliability
- 471 GÜNTER LAST. Ergodicity properties of stress release, repairable system and workload models
- 499 ANYUE CHEN AND ERIC RENSHAW. Markovian bulk-arriving queues with state-dependent control at idle time
- 525 FABRICE GUILLEMIN, PHILIPPE ROBERT AND BERT ZWART. Tail asymptotics for processor-sharing queues
- 544 J. D. BIGGINS AND A. E. KYPRIANOU. Measure change in multitype branching
- 582 N. LALAM AND C. JACOB. Estimation of the offspring mean in a supercritical or near-critical size-dependent branching process
- N. LALAM, C. JACOB AND P. JAGERS. Modelling the PCR amplification process by a size-dependent branching process and estimation of the efficiency
- 616 T. SAKURAI. Numerical inversion for Laplace transforms of functions with discontinuities
- 643 GOPAL K. BASAK AND KWOK-WAH REMUS HO. Level-crossing probabilities and first-passage times for linear processes

Volume 36 Number 3

Stochastic Geometry and Statistical Applications

- DANIEL HUG, MATTHIAS REITZNER AND ROLF SCHNEIDER. Large Poisson-Voronoi cells and Crofton cells
- 691 MATHEW D. PENROSE AND ANDREW R. WADE. Random minimal directed spanning trees and Dickman-type distributions
- 715 J. RATAJ. On estimation of the Euler number by projections of thin slabs

- 725 F. B. KNIGHT AND J. L. STEICHEN. An interference problem with application to crystal growth
- 747 DANIEL DUFRESNE. The log-normal approximation in financial and other computations
- 774 TIM BEDFORD AND BO H. LINDQVIST. The identifiability problem for repairable systems subject to competing risks
- 791 ANNA MARIA PAGANONI AND PIERCESARE SECCHI. Interacting reinforced-urn systems
- 805 GENNADY SAMORODNITSKY. Maxima of continuous-time stationary stable processes
- 824 B. M. HAMBLY AND JONATHAN JORDAN. A random hierarchical lattice: the series-parallel graph and its properties
- 839 EITAN ALTMAN, KONSTANTIN E. AVRACHENKOV AND RUDESINDO NÚÑEZ-QUEIJA. Perturbation analysis for denumerable Markov chains with application to queueing models
- 854 SUNG-SEOK KO AND RICHARD F. SERFOZO. Response times in M/M/s fork-join networks
- 872 NAOTO MIYOSHI. On the subexponential properties in stationary singleserver queues: a Palm-martingale approach
- 893 DO YOUNG EUN AND NESS B. SHROFF. Network decomposition in the many-sources regime
- 919 BENJAMIN AVI-ITZHAK AND HANOCH LEVY. On measuring fairness in queues
- 937 S. LEORATO AND E. ORSINGHER. Bose–Einstein-type statistics, order statistics and planar random motions with three directions
- 971 Correction

Volume 36 Number 4

Stochastic Geometry and Statistical Applications

- 973 MARIA DEIJFEN AND OLLE HÄGGSTRÖM. Coexistence in a two-type continuum growth model
- 981 STEVEN FINCH AND IRENE HUETER. Random convex hulls: a variance revisited
- 987 JAN HANSEN AND MATTHIAS REITZNER. Electromagnetic wave propagation and inequalities for moments of chord lengths
- 996 THIERRY HUILLET. On a deposition process on the circle with disorder

- 1021 SANJAY SHAKKOTTAI, R. SRIKANT AND ALEXANDER L. STOLYAR. Pathwise optimality of the exponential scheduling rule for wireless channels
- 1046 REMCO VAN DER HOFSTAD AND MARTEN J. KLOK. Improving the performance of third-generation wireless communication systems
- 1085 STILIAN STOEV AND MURAD S. TAQQU. Stochastic properties of the linear multifractional stable motion
- 1116 DAVID ASSAF, LARRY GOLDSTEIN AND ESTER SAMUEL-CAHN. Two-choice optimal stopping
- 1148 R. A. DONEY AND P. S. GRIFFIN. Overshoots over curved boundaries, II
- 1175 SAMUEL R. BUSS AND PETER CLOTE. Solving the Fisher-Wright and coalescence problems with a discrete Markov chain analysis
- 1198 JAMES LEDOUX. Linear dynamics for the state vector of Markov chain functions
- 1212 DAMING LIN AND VILIAM MAKIS. Filters and parameter estimation for a partially observable system subject to random failure with continuous-range observations
- 1231 MASAKIYO MIYAZAWA AND YIQIANG Q. ZHAO. The stationary tail asymptotics in the GI/G/1-type queue with countably many background states
- 1252 ROSARIO DELGADO, F. JAVIER LÓPEZ AND GERARDO SANZ. Local conditions for the stochastic comparison of particle systems
- 1278 QIHE TANG AND GURAMI TSITSIASHVILI. Finite- and infinite-time ruin probabilities in the presence of stochastic returns on investments
- 1300 Correction
- 1301 Index (General Applied Probability)
- 1304 Index (Stochastic Geometry and Statistical Applications)