ADVANCES IN APPLIED PROBABILITY

INCLUDING A SECTION ON

STOCHASTIC GEOMETRY AND STATISTICAL APPLICATIONS

VOLUME 41 NUMBER 4

DECEMBER 2009



EDITOR-IN-CHIEF S. ASMUSSEN

FOUNDING EDITOR (1964–1989) J. GANI

PAST EDITOR-IN-CHIEF (1990–2007) C. C. HEYDE

https://doi.org/10.1017/S0001867800003839 Published online by Cambridge University Press

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

Editors

Editor-in-Chief S. ASMUSSEN (Aarhus Universitet)

Coordinating Editors N. H. BINGHAM (Imperial College London)

P. JAGERS (Chalmers University of Technology and Göteborgs

Universitet)

I. MOLCHANOV SGSA (Universität Bern)

H. ALBRECHER (University of Lausanne)

T. AVEN (University of Stavanger)
F. BACCELLI SGSA (ENS, Paris)

J. D. BIGGINS (University of Sheffield)
J. BLANCHET (Columbia University)

S. N. CHIU SGSA (Hong Kong Baptist University) D. J. DALEY (Australian National University)s

P. A. FERRARI (University of São Paulo)

S. FOSS (Heriot-Watt University and Sobolev Institute of Mathematics)

P. W. GLYNN (Stanford University) A. V. GNEDIN (Utrecht University)

O. HÄGGSTRÖM (Chalmers University of Technology)

W. S. KENDALL SGSA (University of Warwick)

F. C. KLEBANER (Monash University) S. G. KOU (Columbia University)

A. E. KYPRIANOU (University of Bath) G. LAST SGSA (Universität Karlsruhe) T. MIKOSCH (Københavns Universitet) J. MØLLER SGSA (Aalborg Universitet)

A. MÜLLER (University of Siegen)

M. D. PENROSE SGSA (University of Bath)

M. REITZNER SGSA (TU Vienna)

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

M. SCARSINI (LUISS)

M. SCHWEIZER (ETH, Zürich) A. L. STOLYAR (Alcatel-Lucent)

D. STOYAN *SGSA* (Bergakademie Freiberg) P. G. TAYLOR (University of Melbourne)

R. VAN DER HOFSTAD (Technische Universiteit Eindhoven)

R. R. WEBER (University of Cambridge)

EDITORIAL OFFICE

Executive Editor L. J. NASH (University of Sheffield)
Production Editor E. TALIB (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 41 Number 1

Stochastic Geometry and Statistical Applications

- PAUL BALISTER, BÉLA BOLLOBÁS, AMITES SARKAR AND MARK WALTERS. A critical constant for the *k*-nearest-neighbour model
- 13 ZAKHAR KABLUCHKO AND EVGENY SPODAREV. Scan statistics of Lévy noises and marked empirical processes
- 38 NATHAN SHANK. Nearest-neighbor graphs on the Cantor set

- 63 G. N. MILSTEIN AND M. V. TRETYAKOV. Monte Carlo methods for backward equations in nonlinear filtering
- 101 JEAN-FRANÇOIS CHASSAGNEUX. A discrete-time approximation for doubly reflected BSDEs
- 131 F. THOMAS BRUSS AND GUY LOUCHARD. The odds algorithm based on sequential updating and its performance
- 154 HSIAO-CHI CHEN AND YUNSHYONG CHOW. Evolutionary prisoner's dilemma games with one-dimensional local interaction and imitation
- 177 R. BEKKER, O. J. BOXMA AND J. A. C. RESING. Lévy processes with adaptable exponent
- 206 C. C. HEYDE AND DINGCHENG WANG. Finite-time ruin probability with an exponential Lévy process investment return and heavy-tailed claims
- 225 SERIK SAGITOV AND MARIA CONCEIÇÃO SERRA. Multitype Bienaymé–Galton–Watson processes escaping extinction
- 247 MAUDE GATHY AND CLAUDE LEFÈVRE. From damage models to SIR epidemics and cascading failures
- 270 HUA ZHOU AND KENNETH LANGE. Composition Markov chains of multinomial type
- JAMES C. FU AND BRAD C. JOHNSON. Approximate probabilities for runs and patterns in i.i.d. and Markov-dependent multistate trials
- 309 Correction

Volume 41 Number 2

Stochastic Geometry and Statistical Applications

- 311 INÉS ARMENDÁRIZ, ANTONIO CUEVAS AND RICARDO FRAIMAN. Nonparametric estimation of boundary measures and related functionals: asymptotic results
- 323 PAUL BALISTER, BÉLA BOLLOBÁS AND MARK WALTERS. Random transceiver networks
- 344 J. DÍAZ, D. MITSCHE AND X. PÉREZ-GIMÉNEZ. On the probability of the existence of fixed-size components in random geometric graphs
- 358 H. S. HARUTYUNYAN AND V. K. OHANYAN. The chord length distribution function for regular polygons

- 367 SHAI COVO. One-dimensional distributions of subordinators with upper truncated Lévy measure, and applications
- 393 VICKY FASEN AND GENNADY SAMORODNITSKY. A fluid cluster Poisson input process can look like a fractional Brownian motion even in the slow growth aggregation regime
- 428 CLAUDIA BRACHNER, VICKY FASEN AND ALEXANDER LINDNER. Extremes of autoregressive threshold processes
- 452 BRICE FRANKE AND TATSUHIKO SAIGO. The extremes of random walks in random sceneries
- 469 ZHAOLEI CUI, YUEBAO WANG AND KAIYONG WANG. Asymptotics for the moments of the overshoot and undershoot of a random walk
- 495 JUN CAI, RUNHUAN FENG AND GORDON E. WILLMOT. On the expectation of total discounted operating costs up to default and its applications
- 523 VALERI T. STEFANOV AND FRANK BALL. Reward distributions associated with some block tridiagonal transition matrices with applications to identity by descent
- 546 YUSIK KIM, RHONDA RIGHTER AND RONALD WOLFF. Job replication on multiserver systems
- 576 YUQIANG LI. The speed of extinction for some generalized Jiřina processes
- 600 PHILIPPE ROBERT AND FLORIAN SIMATOS. Occupancy schemes associated to Yule processes

Volume 41 Number 3

Stochastic Geometry and Statistical Applications

- 623 BARTŁOMIEJ BŁASZCZYSZYN AND D. YOGESHWARAN. Directionally convex ordering of random measures, shot noise fields, and some applications to wireless communications
- 647 HOCK PENG CHAN. Maxima of moving sums in a Poisson random field
- DAVID DEREUDRE. The existence of quermass-interaction processes for nonlocally stable interaction and nonbounded convex grains
- 682 ROLF SCHNEIDER. Weighted faces of Poisson hyperplane tessellations

- 695 RENÉ CALDENTEY, EDWARD H. KAPLAN AND GIDEON WEISS. FCFS infinite bipartite matching of servers and customers
- 731 STEPHANIE LEOCARD. Selective sweep and the size of the hitchhiking set
- 765 FRANK BALL, DAVID SIRL AND PIETER TRAPMAN. Threshold behaviour and final outcome of an epidemic on a random network with household structure
- 797 ABHIMANYU MITRA AND SIDNEY I. RESNICK. Aggregation of rapidly varying risks and asymptotic independence
- 829 GIACOMO ALETTI, CATERINA MAY AND PIERCESARE SECCHI.

 A central limit theorem, and related results, for a two-color randomly reinforced urn
- 845 WLODEK BRYC, DAVID MINDA AND SUNDER SETHURAMAN. Large deviations for the leaves in some random trees
- 874 UĞUR TUNCAY ALPARSLAN. Exceedance of power barriers for integrated continuous-time stationary ergodic stable processes
- 893 DAVID MÁRQUEZ-CARRERAS. Generalized fractional kinetic equations: another point of view

Volume 41 Number 4

Stochastic Geometry and Statistical Applications

- 911 VOLKER BAUMSTARK AND GÜNTER LAST. Gamma distributions for stationary Poisson flat processes
- 940 PIERRE CALKA, JULIEN MICHEL AND KATY PAROUX. Refined convergence for the Boolean model
- 958 MARK L. HUBER AND ROBERT L. WOLPERT. Likelihood-based inference for Matérn type-III repulsive point processes
- 978 MATHEW D. PENROSE AND VADIM SHCHERBAKOV. Maximum likelihood estimation for cooperative sequential adsorption
- 1002 RICHARD COWAN AND R. E. MILES. Letter to the Editor: Convex hulls on a hemisphere

- 1005 MARK FACKRELL. An alternative characterization for matrix exponential distributions
- 1023 ROBB KOETHER, MARCUS PENDERGRASS AND JOHN OSOINACH. The lying oracle game with a biased coin
- 1041 ABBA M. KRIEGER AND ESTER SAMUEL-CAHN. The secretary problem of minimizing the expected rank: a simple suboptimal approach with generalizations
- 1059 VINCENT BANSAYE. Cell contamination and branching processes in a random environment with immigration
- 1082 F. FREUND AND M. MÖHLE. On the number of allelic types for samples taken from exchangeable coalescents with mutation
- 1102 MARINA AXELSON-FISK AND OLLE HÄGGSTRÖM. Conditional percolation on one-dimensional lattices
- 1123 LUC DEVROYE, JOACHIM GUDMUNDSSON AND PAT MORIN. On the expected maximum degree of Gabriel and Yao graphs
- 1141 A. A. BOROVKOV. Insurance with borrowing: first- and second-order approximations
- 1161 JOSÉ E. FIGUEROA-LÓPEZ. Nonparametric estimation of time-changed Lévy models under high-frequency data
- 1189 VITALI WACHTEL. Transition phenomena for ladder epochs of random walks with small negative drift
- 1215 Index (General Applied Probability)
- 1217 Index (Stochastic Geometry and Statistical Applications)