# ADVANCES IN APPLIED PROBABILITY

INCLUDING A SECTION ON

STOCHASTIC GEOMETRY AND STATISTICAL APPLICATIONS

VOLUME 38 NUMBER 2

JUNE 2006



CO-EDITORS-IN-CHIEF C.C. HEYDE S. ASMUSSEN

FOUNDING EDITOR (1964–1989) J. GANI

### **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

Co-Editors-in-Chief

C. C. HEYDE (Columbia University and Australian National

University)

S. ASMUSSEN (Aarhus Universitet)

Coordinating Editors

N. H. BINGHAM (Universitity of Sheffield)
I. MOLCHANOV SGSA (Universität Bern)

**Editors** 

R. J. ADLER (Technion, Haifa)

T. AVEN (Stavanger University College)

F. BACCELLI SGSA (ENS, Paris)

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

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

C. CANNINGS (University of Sheffield)
R. COWAN SGSA (University of Sydney)
D. J. DALEY (Australian National University)

P. J. DONNELLY (University of Oxford)

P. EMBRECHTS (ETH, Zürich)
P. W. GLYNN (Stanford University)

O. HÄGGSTRÖM (Chalmers University of Technology)

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)

A. E. KYPRIANOU (Heriot-Watt University) G. LAST SGSA (Universität Karlsruhe)

T. MIKOSCH (Københavns Universitet) M. D. PENROSE SGSA (University of Bath)

S. I. RESNICK (Cornell University)

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

M. SCARSINI (Università di Torino) M. SCHWEIZER (ETH, Zürich)

A. L. STOLYAR (Lucent Technologies)

D. STOYAN SGSA (Bergakademie Freiberg)
J. L. TEUGELS (Katholieke Universiteit Leuven)

E. B. VEDEL JENSEN SGSA (Aarhus Universitet)
D. VERE-JONES (Victoria University of Wellington)

R. A. VITALE SGSA (University of Connecticut)

R. R. WEBER (University of Cambridge)

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.

## FORTHCOMING PAPERS JOURNAL OF APPLIED PROBABILITY

O. L. V. COSTA AND F. DUFOUR. Ergodic properties and ergodic decompositions of continuous-time Markov processes

JESÚS DE LA CAL AND JAVIER CÁRCAMO. Stochastic orders and majorization of mean order statistics

R. G. DOLGOARSHINNYKH AND STEVEN P. LALLEY. Critical scaling for the SIS stochastic epidemic

LAURENT DOYEN AND OLIVIER GAUDOIN. Imperfect maintenance in a generalized competing risks framework

M. DRAIEF AND A. GANESH. Efficient routeing in Poisson small-world networks

ERIK EKSTRÖM. Bounds for perpetual American option prices in a jump diffusion model

ALEXIS GILLETT, RONALD MEESTER AND PETER VAN DER WAL. Maximal avalanches in the Bak-Sneppen model

NOBUAKI HOSHINO. A discrete multivariate distribution resulting from the law of small numbers

HUW W. JAMES AND E. J. COLLINS. An analysis of transient Markov decision processes

GEORGE KORDZAKHIA AND STEVEN P. LALLEY. Ergodicity and mixing properties of the northeast model

CLAUDIO MACCI AND GABRIELE STABILE. Large deviations for risk processes with reinsurance COLIN L. MALLOWS AND JEAN MELOCHE. Searching for searchers

TOSHINAO NAKATSUKA. The untraceable events method for absorbing processes

BIRGIT NIESE. A martingale characterization of Pólya-Lundberg processes

L. PEREIRA AND H. FERREIRA. Limiting crossing probabilities of random fields

J. PREATER. On-line selection of an acceptable pair

MARINA SANTACROCE. Derivatives pricing via p-optimal martingale measures: some extreme cases

YVIK C. SWAN AND F. THOMAS BRUSS. A matrix-analytic approach to the N-player ruin problem

YUEBAO WANG AND KAIYONG WANG. Asymptotics for the density of the supremum of a random walk with heavy-tailed increments

CHUANCUN YIN AND JUNSHENG ZHAO. Nonexponential asymptotics for the solutions to renewal equations, with applications

J. E. YUKICH. Ultra-small scale-free geometric networks

## FORTHCOMING PAPERS ADVANCES IN APPLIED PROBABILITY

Stochastic Geometry and Statistical Applications

RICHARD COWAN. A more comprehensive complementary theorem for the analysis of Poisson point processes

General Applied Probability

HYUN-SOO AHN AND RHONDA RIGHTER. Dynamic load balancing with flexible workers

A. D. BARBOUR AND AIHUA XIA. Normal approximation for random sums CHRISTIAN BENDER AND JOHN SCHOENMAKERS. An iterative method for multiple stopping: convergence and stability

A. B. DIEKER. Applications of factorization embeddings for Lévy processes

K. D. GLAZEBROOK, D. RUIZ-HERNANDEZ AND C. KIRKBRIDE. Some indexable families of restless bandit problems

RAPHAEL HAUSER, SERVET MARTÍNEZ AND HEINRICH MATZINGER. Large deviations-based upper bounds on the expected relative length of longest common subsequences

KEI KOBAYASHI, HIDEKI KAWASAKI AND AKIMICHI TAKEMURA. Parallel matching for ranking all teams in a tournament

M. MÖHLE. On the number of segregating sites for populations with large family sizes MICHAEL SCHRÖDER. On ladder height densities and Laguerre series in the study of stochastic functionals. I: Basic methods and results

MICHAEL SCHRÖDER. On ladder height densities and Laguerre series in the study of stochastic functionals. II: A constructive structure theory of exponential functionals of Brownian motion

JUN SEKINE. A note on long-term optimal portfolios under drawdown constraints