

FORTHCOMING PAPERS

The following papers have been accepted for publication in forthcoming issues. Further details are available from the corresponding author where an e-mail address or fax number is given.

Further information about the Applied Probability Trust and its publications is available on the World Wide Web. Our home page has the URL <http://www.shef.ac.uk/~apt/>

- ANDJEL, E. and SCHINAZI, R. A complete convergence theorem for an epidemic model
- ASMUSSEN, SØREN and KELLA, OFFER Rate modulation in dams and ruin problems
• asmus@maths.lth.se
- ASMUSSEN, SØREN and TEUGELS, JOZEF L. Convergence rates for $M/G/1$ queues and ruin problems with heavy tails • asmus@maths.lth.se
- BANJEVIC, D. Recurrent relations for distribution of waiting time in Markov chain
- BARBOUR, A. D. and BROWN, TIMOTHY C. Approximate versions of Melamed's theorem
• tim@stats.mu.oz.au
- BARRY, DANIEL and HARTIGAN, JOHN A. The minimax bookie
- BLASZCZYSZYN, BARTLOMIEJ and ROLSKI, TOMASZ Expansions for Markov-modulated systems and approximations of ruin probability • rolski@math.uni.wroc.pl
- BOROVKOV, ALEXANDER A. Asymptotic expansions for functionals of dilation of point processes
- BOROVKOV, K. and PFEIFER, D. On improvements of the order of approximation in the Poisson limit theorem
- BOROVKOV, K. and VATUTIN, V. A. On distribution tails and expectations of maxima in critical branching processes
- BÖHM, W. and PANNY, W. Simple random walk statistics Part II: Continuous time results
- CAMBANIS, STAMATIS and FAKHRE-ZAKERI, ISSA Forward and reversed time prediction of autoregressive sequences • issa@stat.unc.edu
- CAVAZOS-CADENA, ROLANDO and FERNÁNDEZ-GAUCHERAND, EMMANUEL Value iteration in a class of average controlled Markov chains with unbounded costs: necessary and sufficient conditions for pointwise convergence • emmanuel@sie.arizona.edu
- CHAUDHRY, M. L. and GUPTA, U. C. Performance analysis of the discrete time $GI/Geom/1/N$ queue • math@rmc.ca
- CHEN, HONG Rate of convergence of the fluid approximation for generalized Jackson networks
- CHEN, TUHAO and SENETA, E. Multivariate Bonferroni-type bounds
- COMMAULT, C. and CHEMLA, J. P. An invariant property of phase-type representations and some applications • chemla@univ-tours.fr
- COURCOUBETIS, COSTAS and WEBER, RICHARD Buffer overflow asymptotics for a switch handling many traffic sources • rrw1@statslab.cam.ac.uk
- COWAN, RICHARD, YU, PHILIP L. H. and FERGUSON, THOMAS S. Restrictions on the saddle-point solution in the game of teamball
- DASSIOS, ANGELOS Sample quantiles of additive renewal reward processes • a.dassios@lse.ac.uk
- DEHAY, DOMINIQUE and LESKOW, JACEK Functional limit theory for the spectral covariance estimator • leskow@pstat.ucsb.edu
- DEKKING, F.M. An inequality for pairs of martingales and its application to fractal image coding
- DE NITTO PERSONÈ, VITTORIA and GRASSI, VINCENZO Solution of finite QBD processes
- DETTE, HOLGER On the generating functions of a random walk on the non-negative integers

Forthcoming papers

- DOBROW, ROBERT P.** On the distribution of distances in recursive trees
- DOMINÉ, MARCO** First passage time distribution of a Wiener process with drift concerning two elastic barriers • Marco.Domine@Mathematik.Uni-Magdeburg.de
- DUFFIELD, N. G.** Economies of scale in queues with sources having power-law large deviation scalings • duffieldn@dcu.ie
- ELSHAMY, MAGED** Stochastic models of damped vibrations
- FALIN, G.** A heterogeneous blocking system in a random environment • falin@nw.math.msu.su
- FERRARI, P. A. and FONTES, L. R. G.** Poissonian approximation for the tagged particle in asymmetric simple exclusion • pablo@ime.usp.br
- GAWELL, BOLESŁAW and KIMMEL, MAREK** Iterated Galton–Watson process
• kimmel@rice.edu
- GNEDIN, ALEXANDER V.** On the full information best-choice problem
- GOLDSTEIN, L. and RINOTT, Y.** Multivariate normal approximations by Stein’s method and size bias couplings • Igoldste@hto.usc.edu
- GONZALEZ, M. and MOLINA, M.** On the limit behaviour of a superadditive bisexual Galton–Watson branching process • mvelasco@ba.unex.es
- GOSSELIN, FRÉDÉRIC** Two classes of subcritical population-size-dependent Bienaymé–Galton–Watson branching processes • gosselin@cefe.cnrs-mop.fr
- GRIPENBERG, GUSTAF and NORROS, ILKKA** On the prediction of fractional Brownian motion
• Gustaf.Gripenberg@helsinki.fi
- GUILLEMIN, FABRICE, MAZUMDAR, RAVI R. and SIMONIAN, ALAIN** On heavy traffic approximations for transient characteristics of $M/M/\infty$ queues • guillemin@lannion.cnet.fr
- HAIGH, JOHN** More on n -point, win-by- k games • J.Haigh@sussex.ac.uk
- HANIN, L. G., KLEBANOV, L. B. and YAKOVLEV, A. YU.** Randomized multihit models and their identification • guest0@mathlab.mtu.edu
- HAUKAS, HARALD and AVEN, TERJE** A general formula for the downtime distribution of a parallel system
- HO, HWAI-CHUNG and HSING, TAIEN** On the asymptotic joint distribution of the sum and maximum of stationary normal random variables • thsing@stat.tamu.edu
- HSU, IVY and WALRAND, JEAN** Dynamic bandwidth allocation for ATM switches
- HU, TAIZHONG** Stochastic comparisons of order statistics under multivariate imperfect repair
- HUANG, DAWEI and SPENCER, N.M.** On a random vibration model
- HÜSLER, J. and SCHMIDT, M.** A note on the point processes of rare events
- JAIN, GAUTAM and SIGMAN, KARL** A Pollaczek–Khintchine formula for $M/G/1$ queues with disasters • sigman@ieor.columbia.edu
- JOE, HARRY** Time series models with univariate margins in the convolution-closed infinitely divisible class
- KARPELEVITCH, F. I. and KREININ, A.** Asymptotic analysis of queueing systems with identical service • kreinin@csri.toronto.edu
- KASPI, H. and KELLA, O.** Stability of feed-forward fluid networks with Lévy inputs
- KATZENBEISSER, W. and PANNY, W.** Simple random walk statistics Part I: Discrete time results
- KELLA, OFFER and WHITT, WARD** Stability and structural properties of stochastic storage networks
- KOUTRAS, M. V.** On a Markov chain approach for the study of reliability structures
- LEFÉVRE, CLAUDE and UTEV, SERGEY** Comparing partial and iterated sums of exchangeable Bernoulli random variables • clefevre@ulb.ac.be
- LI, JINGWEN** From FIFO to LIFO: a functional ordering of service delay via arrival discipline
- LIN, XIAODONG** Tail of compound distributions and excess time • sheldon@utstat.toronto.edu

Forthcoming papers

- LINDVALL, TORGNY and ROGERS, L. C. G. On coupling of random walks and renewal processes
• lindvall@math.chalmers.se
- LIU, LIMING and SHI, DING-HUA Busy period in $GI^X/G/\infty$
- LOCATELLI, MARCO Convergence properties of simulated annealing for continuous global optimization
• locatelli@hermes.mc.dsi.unimi.it
- LUND, ROBERT B. The stability of storage models with shot noise input
- MCBETH, DOUGLAS W. and WEERASINGHE, ANANDA P. Finite time optimal control of a process leaving an interval
• dwmcbeth@iastate.edu
- MENG, FAN C. More on optimal allocation of components in coherent systems
- MILLIGAN P.J.M. and DOWNHAM, D.Y. Models of superinfection and acquired immunity to multiple parasite strains
• p.milligan@liverpool.ac.uk
- MØLLER, CHRISTIAN MAX Kolmogorov equations for the compound distribution function
• chrmax@math.ku.dk
- MØRI, TAMÁS F. Bonferroni inequalities and deviations of discrete distributions
- NANDA, ASOK K., JAIN, KANCHAN and SINGH, HARSHINDER On closure of some partial orderings under mixtures and convolutions
- NANDA, ASOK K., JAIN, KANCHAN and SINGH, HARSHINDER Properties of moments for s -order equilibrium distributions
- OLOFSSON, PETER General branching processes with immigration
• petero@math.chalmers.se
- O'NEILL, PHILIP Strong approximations for some open population epidemic model
• P.O'Neill@bradford.ac.uk
- PAPANGELOU, F. Large deviations and the Bayesian estimation of higher order Markov transition functions
- PEKÖZ, EROL A. Geometric approximation with the Stein–Chen method: application to sequence pattern waiting times
- PENG, NAN FU Spectral representations of the transition probability matrices for continuous time finite Markov chains
• nfpeng@twncu01.bitnet
- PENROSE, MATHEW Spatial epidemics with large finite range
• matthew.penrose@durham.ac.uk
- PETERSON, WILLIAM P. and WEIN, LAWRENCE M. Heavy traffic analysis of a transportation network model
• billp@middlebury.edu
- PHELAN, MICHAEL J. A Markov process and a martingale problem
• phelan@wharton.upenn.edu
- PHELAN, MICHAEL J. A Girsanov transformation for birth and death on a Brownian flow
• phelan@wharton.upenn.edu
- PLATEN, E. and REBOLLEDO, R. Principles for modelling financial markets
- QUINE, M. P. and LAW, J. S. Exact results for a secretary problem
• quine_m@maths.su.oz.au
- RIDDER, AD Fast simulation of Markov fluid models
- RIGHTER, RHONDA Optimal control of the finite source single server queue
• righter@scuacc.scu.edu
- ROUGHAN, MATTHEW An analysis of a modified $M/G/1$ queue using a martingale technique
• roughan@cssip.edu.au
- RYDÉN, TOBIAS On identifiability and order of continuous-time aggregated Markov chains, Markov-modulated Poisson processes and phase-type distributions
• tobias@maths.lth.se
- SCHMIDLI, HANSPETER Lundberg inequalities for a Cox model with a piecewise constant intensity
• schmidli@mi.aau.dk
- SESHADRI, SRIDHAR A sample path analysis of the delay in the $M/G/C$ system
• sseshadr@stern.nyu.edu
- SGIBNEV, M. S. Markov renewal functions
- SHEU, SHEY-HUEI A modified block replacement policy with two variables and general random minimal repair cost

Forthcoming papers

- SIMONOT, F. and SONG, Y.Q.** Characterization of convergence rates for the approximation of the stationary distribution of infinite monotone stochastic matrices • simonofr@esstin.u-nancy.fr
- SOLTANI, A. REZA** Reward processes with nonlinear reward functions
- SONIN, I.M.** Increasing the reliability of a machine reduces the period of its work
• fma00is1@unccvm.uncc.edu
- TAIBI, DJAOUAD** Une généralisation du modèle de diffusion de Bernoulli–Laplace
• taibi@univ-rouen.fr
- TSAKLIDIS, G.** The evolution of the attainable structures of a continuous time homogeneous Markov system with fixed size
- VAN DEN BERG, J.** A note on disjoint-occurrence inequalities for marked Poisson point processes
- VELLAISAMY, P. and CHAUDHURI, B.** Poisson and compound Poisson approximations for random sums of random variables • bikram@cc.iitb.ernet.in
- VOIT, M.** Asymptotic distributions for the Ehrenfest urn and related random walks
- WARREN, DI and SENETA, E.** Peaks and Eulerian numbers in a random sequence
• seneta.e@maths.su.oz.au
- WILLMOT, GORDON E.** A non-exponential generalization of an inequality arising in queueing and insurance risk
- YAO, YI-CHING** On Kingman's characteristic functional approach to Rényi's characterization of Poisson processes • yao@statsun.stat.colostate.edu
- ZHANG, YU** Continuity of percolation probability in $\infty + 1$ dimensions
- ZHAO, Y. QUENNEL and LIU, DANIELLE** The censored Markov chain and the best augmentation

A similar list of papers accepted for publication in *Advances in Applied Probability* now appears at the end of each issue of that journal.

ADVANCES IN APPLIED PROBABILITY

The main function of AAP is to define areas of recent progress and potential development in applied probability. The Editorial Board would like to encourage the submission of review papers summarising and coordinating recent results. In addition to review papers, AAP is also a medium of publication for

- longer research papers, which may include expository material
- expository papers on branches of mathematics of interest to probabilists
- papers outlining areas in which probability models can be usefully developed
- papers presented at conferences which do not publish their proceedings
- letters to the editor on any appropriate topic

AAP now also includes a section devoted to stochastic geometry and statistical applications. Volume 27 Number 4 of AAP contains the following papers:

Stochastic Geometry and Statistical Applications

S. N. CHIU. Limit theorems for the time of completion of Johnson–Mehl tessellations

N. L. GARCIA. Birth and death processes as projections of higher-dimensional Poisson processes

I. S. MOLCHANOV, E. OMEY and E. KOZAROVITZKY. An elementary renewal theorem for random compact convex sets

K. J. WORSLEY. Boundary corrections for the expected Euler characteristic of excursion sets of random fields, with an application to astrophysics

General Applied Probability

P. O'NEILL. Epidemic models featuring behaviour change

L. MYTNIK and R. J. ADLER. Bisexual branching diffusions

P. W. GLYNN and P. L'ECUYER. Likelihood ratio gradient estimation for stochastic recursions

R. AGRAWAL. Sample mean based index policies with $O(\log n)$ regret for the multi-armed bandit problem

M. SHAKED and R. SZEKLI. Comparison of replacement policies via point processes

G. L. CHOUDHURY, K. K. LEUNG and W. WHITT. An algorithm to compute blocking probabilities in multi-rate multi-class multi-resource loss models

K. P. KONTOVASILIS and N. M. MITROU. Markov-modulated traffic with near-complete decomposability characteristics and associated fluid queueing models

R. PÉREZ-OCÓN and M. L. GÁMIZ-PÉREZ. On the HNBUE property in a class of correlated cumulative shock models

Subscription rates (per volume) for AAP are the same as for JAP (see the inside back cover). A discount of 10% is allowed to subscribers who order both journals at the same time directly from the Applied Probability Office. A detailed price list, including back issues, is available on request. Payment by credit card or by cheque (on a UK, US or Australian bank) is accepted.

All orders, enquiries, submissions and correspondence should be sent to:

Executive Editor, Applied Probability
School of Mathematics and Statistics
The University, Sheffield S3 7RH, UK

SUBSCRIPTION RATES

Subscription rates (post free) for the 1995 volume of the *Journal* are as follows:

US\$169.80; \$A237.000; £110.26 for libraries and institutions;

US\$56.60; \$A79.00; £36.85 for individuals belonging to a recognised scientific society.

Members of the London Mathematical Society should apply direct to the Secretary of the Society for copies of the *Journal*.

Please send all enquiries to: Applied Probability, School of Mathematics and Statistics, The University, Sheffield S3 7RH, UK.

We can provide back issue prices on application. Cheques, money orders, etc. should be made out to APPLIED PROBABILITY. Payment is accepted in US, UK or Australian currency.

NOTES FOR CONTRIBUTORS

Papers published in the *Journal* are of two kinds:

(1) *research papers* not exceeding 20 printed pages;

(2) *short communications* of a few printed pages in the nature of notes or brief accounts of work in progress.

Review papers, longer research papers and letters to the editor are published in *Advances in Applied Probability*, a companion journal. (Note: Letters relating specifically to papers which have appeared in the *Journal of Applied Probability* will continue to appear in the *Journal*.)

The editors may publish accepted papers in either journal, according to the space available, in order to meet the 15-month deadline in publication referred to below.

Submission of papers

Papers submitted to the Applied Probability journals are considered on the understanding that they have not been published previously and are not under consideration by another publication. Papers will not be reprinted without the written permission of the Trust. It is the policy not to accept for publication papers which cannot appear in print within 15 months of the date of receipt of the final version. Fifty reprints of each paper will be provided free; additional reprints are available at cost.

Papers should be written in English or French; papers in other languages may be accepted by the editors, but will appear (subject to the author's agreement) in English or French translation. Please supply *three* double-spaced hard copies, at least one of which should be printed on one side of the paper only. The paper should include: (1) a short abstract of approximately 4–10 lines giving a non-mathematical description of the subject matter and results; (2) list of keywords detailing the contents for the purpose of computerised information retrieval; (3) primary and secondary classifications according to the 1991 Mathematics Subject Classification, to be found in the 1990 Annual Index of *Mathematical Reviews*.

Authors are advised to consult *The Author's Guide to the Applied Probability Journals* when preparing papers for submission. A copy of this guide may be obtained free of charge from the Applied Probability Office.

For efficiency in processing, authors are requested to send all submissions to the Applied Probability Office in Sheffield, rather than to individual editors. The address for all submissions is:

**Executive Editor, Applied Probability, School of Mathematics and Statistics,
The University, Sheffield S3 7RH, UK.**

COPYRIGHT

The copyright of all published papers shall be vested in the Trust. When a paper is accepted for publication, the Trust requests the author(s) to sign a form assigning copyright to the Trust. Failure to do this promptly may delay or prevent publication.

Authorisation to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by the Applied Probability Trust for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$00.70 per copy, plus .20 per page is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923, USA. 0021-9002/95 \$00.70 + .20.

Volume 32 Number 4

Research Papers

- 851 PAUL GLASSERMAN AND DAVID D. YAO. Stochastic vector difference equations with stationary coefficients
- 867 WOJCIECH NIEMIRO. Tail events of simulated annealing Markov chains
- 877 MARK X. GESKE, ANANT P. GODBOLE, ANDREW A. SCHAFFNER, ALLISON M. SKOLNICK AND GARRICK L. WALLSTROM. Compound Poisson approximations for word patterns under Markovian hypotheses
- 893 DANIEL P. HEYMAN. A decomposition theorem for infinite stochastic matrices
- 902 S. D. JACKA AND G. O. ROBERTS. Weak convergence of conditioned processes on a countable state space
- 917 TAKIS KONSTANTOPOULOS AND MICHAEL ZAZANIS. A discrete-time proof of Neveu's exchange formula
- 922 D. KOFMAN AND H. KOREZLIOGLU. Some EATA properties for marked point processes
- 930 J.-C. GRUET AND Z. SHI. Some asymptotic results for exponential functionals of Brownian motion
- 941 I. M. ASYMONT, G. FAYOLLE AND M. V. MENSHIKOV. Random walks in a quarter plane with zero drifts: transience and recurrence
- 956 MARKUS ROTERS. An optimal stopping problem for random walks with non-zero drift
- 960 ARTHUR COHEN AND HAROLD B. SACKROWITZ. On stochastic ordering of random vectors
- 966 CEMAL KOÇ. Recurring-with-carry sequences
- 972 ISHAY WEISSMAN AND URI COHEN. The extremal index and clustering of high values for derived stationary sequences
- 982 ISHAY WEISSMAN. Records from a power model of independent observations
- 991 K. A. BOROVKOV. On crossing times for multidimensional walks with skip-free components
- 1007 MARCO DOMINÉ. Moments of the first-passage time of a Wiener process with drift between two elastic barriers
- 1014 SUNIL K. DHAR AND XULUN JIANG. Probability bounds on the finite sum of the binary sequence of order k
- 1028 GWO DONG LIN. On weak convergence within a Lorenz ordering family of distributions
- 1032 L. L. CAMPBELL, A. L. MCKELLIPS AND P. H. WITTKÉ. Distributions and expectations of singular random variables
- 1041 BRUNO MASSÉ. Invariance principle for the deviation between the probability content and the interior point proportion of a random convex hull
- 1048 ERIC JAKEMAN, SEAN PHAYRE AND ERIC RENSHAW. The evolution and measurement of a population of pairs
- 1063 J. GANI AND SID YAKOWITZ. Error bounds for deterministic approximations to Markov processes, with applications to epidemic models
- 1077 L. C. G. ROGERS AND Z. SHI. The value of an Asian option
- 1089 ELIANE R. RODRIGUES. The performance of the move-to-front scheme under some particular forms of Markov requests
- 1103 QING DU. A monotonicity result for a single-server queue subject to a Markov-modulated Poisson process
- 1112 XIULI CHAO AND LIYI DAI. A monotonicity result for a single-server loss system
- 1118 XUNJING LI AND SHANJIAN TANG. General necessary conditions for partially observed optimal stochastic controls

Short Communication

- 1138 CLAUDE LEFÈVRE AND SERGEY UTEV. On a conjecture for the non-existence of the expectation of randomly stopped sums
- 1142 Obituary: MOTOO KIMURA
- 1145 Index