FORTHCOMING PAPERS

AALTO, SAMULI Characterization of the output rate process for a Markovian storage model ABRAMOV, VYACHESLAV M. On a property of refusals stream

ALEXANDER, KENNETH S. Shortest common superstrings of random strings

AL-MUTAIRI, D. K., AL-KHAMIS, T. M. and ABDEL-HAMEED, M. S. A Bayesian analysis of layered defense systems

- ANDERSSON, HAKAN and DJEHICHE, BOUALEM Limit theorems for the total size of a spatial epidemic
- BARBOUR, A. D. and PHATARFOD, R. M. Dimensioning a multiple hashing scheme
- **BÄUERLE, NICOLE** Monotonicity results for MR/GI/1 queues
- BENDA, MARTIN A central limit theorem for contractive stochastic dynamical systems
- **BENTARZI, MOHAMED and HALLIN, MARC** Spectral factorization of periodically correlated MA(1) processes
- BEREZNER, S. A., KRZESINSKI, A. E. and TAYLOR, P. G. A product-form 'loss network' with a form of queueing

BEREZNER, S. A., KRZESINSKI, A. E. and TAYLOR, P. G. On the inverse of Erlang's function

- BERTOIN, J., CHAUMONT, L. and YOR, M. Two chain-transformations and their applications to quantiles
- **BOLLOBAS, BÉLA and STACEY, ALAN** Approximate upper bounds for the critical probability of oriented percolation in two dimensions based on rapidly mixing Markov chains
- BRUSS, F. THOMAS and FERGUSON, THOMAS S. Multiple buying or selling with vector offers
- CAI, J. and WU, Y. Characterization of life distributions under some generalised stochastic orderings
- CALVIN, JAMES M. and GLYNN, PETER W. Average case behavior of random search for the maximum
- CALZOLARI, A. and MARCHETTI, F. Limit motion of an Ornstein-Uhlenbeck particle on the equilibrium manifold of a force field
- **CAMPI, MARCO** A unique representation theorem for the conditional expectation of stationary processes and application to dynamic estimation problems
- CECI, CLAUDIA and GERARDI, ANNA Filtering of a branching process given its split times
- CHAO, XIULI Partial balances in batch arrival batch service and assemble-transfer queueing networks
- CHAO, XIULI and ZHENG, SHAOHUI A result on networks of queues with customer coalescence and state-dependent signaling
- CHEN, ROBERT W., ROSENBERG, BURT and SHEPP, LARRY A. A secretary problem with two decision makers
- CHONG, K. S. and LAM, K. Cost comparison of a spectrum of self-organizing rules
- CHRISTAKOS, GEORGE and HRISTOPULOS, DIONISSIOS T. Characterization of contaminated sites by means of stochastic indicator parameters
- COHEN, URI and WEISSMAN, ISHAY The extremal index and clustering of high values for derived stationary sequences
- **DI MATTEO, ILARIA and ORSINGHER, ENZO** Detailed probabilistic analysis of the integrated three-valued telegraph signal
- DION, J.P. and YANEV, N.M. Limit theorems and estimation theory for branching processes with or without immigration

EBRAHIMI, NADER Multivariate age and block replacement policies

FAGIUOLI, E. and PELLEREY, F. Moment inequalities for sums of DMRL random variables

FENG, SHUI Propagation of chaos of multitype mean field interacting particle systems

FERGUSON, THOMAS S. and MELOLIDAKIS, C. Last round betting

- **FROSTIG, ESTHER and LEHTONEN, TAPANI** On the optimality of homogenous servers in a fork join queueing system with exponential processing times
- GARREN, STEVEN T. and RICHARDS, DONALD ST P. General conditions for comparing the reliability functions of systems of components sharing a common environment
- GEORGII, HANS-OTTO and KÜNETH, TORSTEN Stochastic comparison of point random fields GOSSELIN, FRÉDÉRIC Two classes of subcritical population-size-dependent Bienaymé–Galton– Watson branching processes
- GOUET, RAUL Strong convergence of proportions in a multicolor Polya urn
- GRÜBEL, RUDOLF Hoare's selection algorithm: a Markov chain approach
- **GUILLEMIN, FABRICE and PINCHON, DIDIER** Continued fraction analysis of the duration of an excursion in an $M/M/\infty$ system
- GUTIERREZ, R., RICCIARDI, L. M., ROMAN, P., and TORRES, F. First-passage-time densities for time-non-homogeneous diffusion processes

HAVIV, MOSHE and PUTERMAN, MARTIN L. Bias optimality in controlled queueing systems HORVATH, LAJOS Diffusion approximation for random walks on anisotropic lattices

- JORGENSEN, BENT and SONG, XUE-KUN Stationary time-series models with exponential dispersion model margins
- KEBIR, Y. Laplace transform for the renewal equation
- KELLA, OFFER Stochastic storage networks: stationarity and the feedforward case
- KENNEDY, D. P. and KERTZ, R. P. A prophet inequality for independent random variables with finite variances
- **KLÜPPELBERG, C. and MIKOSCH, T.** Large deviations of heavy-tailed random sums with applications to insurance and finance
- KOCHAR, SUBHASH C., PEREZ, JOSE MUNOZ and FERRANDIZ, JOSE MARIA Partial orderings of distributions based on right-spread functions
- KOLESNIK, ALEXANDER The equations of Markovian random evolutions in a line
- KOUTRAS, M. V. and ALEXANDROU, V. A. Sooner waiting time problems in a sequence of trinomial trials
- **KRATZ, MARIE F. and ROOTZÉN, HOLGER** On the rate of convergence for extremes of mean square differentiable stationary normal processes
- KROESE, DIRK P. Heavy traffic analysis for continuous polling models
- LEDOUX, JAMES A geometric invariant in weak lumpability of finite Markov chains

LEFEBVRE, MARIO On the inverse of the first hitting time problem for bidimensional processes

- LI, WEI, SHI, DINGHUA and CHAO, XIULI Reliability analysis of M/G/1 queueing systems with server breakdowns and vacations
- LUND, ROBERT B. The geometric convergence rate of a Lindley random walk
- MA, CHUNSHENG A note on stochastic ordering of order statistics
- MARTIN, R. J. and WALKER, A. M. A power-law model and other models for long-range dependence
- MCCORMICK, WILLIAM P. Extremes for shot noise processes with heavy tailed amplitudes
- MÖHLE, MARTIN Fixation in bisexual models with variable population sizes
- NORBERG, TOMMY On the time a Markov chain spends in a lumped state
- O'CONNELL, NEIL Large deviations for departures from a shared buffer
- O'CONNELL, NEIL Queue-lengths and departures at a single-server, multi-class queue
- PHATARFOD, R. M., PRYDE, A. J. and DYTE, DAVID The linear search problem with Markov dependent requests
- **PREATER, J.** A perpetuity and the $M/M/\infty$ ranked server system
- **PREATER, J.** $M/M/\infty$ transience revisited

- RAUL GOUET, Strong convergence of proportions in a multicolor Polya urn
- **RENSHAW, E. and DAI, Y.** Regularity and symmetry results for birth-death-migration processes **RIGHTER, RHONDA** Stochastic scheduling for a two machine open shop
- **ROBERTS, GARETH O., ROSENTHAL, JEFFREY S. and SCHWARTZ, PETER O.** Convergence properties of perturbed Markov chains
- ROTERS, MARKUS Optimal stopping in a dice game
- RUIZ-MEDINA, M. D. and VALDERRAMA, M. J. Dynamic forecasting with a Laplace random field. An application to geophysics data
- SABNIS, S. V. and NAIR, MINI R. Coherent structures and unimodality
- SARKAR, ANISH Continuity and convergence of the percolation function in continuum percolation
- SCARSINI, MARCO Multivariate convex orderings, dependence, and stochastic equality
- SCHÖTTL, A. Optimal stopping of a risk reserve process with interest and cost rates
- SHAKED, M. and WONG, T. Stochastic comparisons of random minimums and maximums
- SHAKED, M. and WONG, T. Stochastic orders based on ratios of Laplace transforms
- **SIMONOT, F.** Convergence rate for the distributions of GI/M/1/n and M/GI/1/n as n tends to infinity
- SRIRAM, T. N. Asymptotic expansions for array branching processes with applications to bootstrapping
- SZCZOTKA, WLADYSLAW Asymptotic stationarity of queues
- **TOYOIZUMI, HIROSHI** Nonparametric estimate of virtual waiting time distribution from count data **TANIKAWA, AKIO** On the rate of convergence of Borovkov's multidimensional ergodic Markov chain **TASCHE, DIRK** On the second Borelli–Cantelli lemma for strongly mixing sequences of events
- **VERMET, F.** Asymptotic behaviour and phase transition for a non-symmetric Edwards measure on \mathbb{Z} **WANG, YONGJIN** A proof of the persistence criteria of a class of superprocesses
- WATKINS, JOSEPH C. Mechanical models for cell movement: locomotion, translocation, migration WONG, TITYIK Preservation of multivariate stochastic orders under multivariate shock models
- WOODHAM, SARAH-ANNE and RICHARDS, DONALD ST P. Comparison of system reliability functions under laboratory and actual operating environments
- XIA, AIHUA On the rate of Poisson process approximation to Bernoulli process
- XIE, M. and LAI, C. D. On reliability bounds via conditional equalities

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

The Author's Guide to the Applied Probability Journals

The guide is now available in electronic form from our Web site. It contains advice on how best to prepare your paper for submission to Applied Probability Trust journals, and how to use our $ET_EX 2_{\varepsilon}$ and BIBT_EX packages. Point your browser to:

http://www.shef.ac.uk/~apt/

SUBSCRIPTION RATES

Subscription rates (post free) for volume 34 (1997) of the Journal of Applied Probability are as follows:

US\$197.00; \$A261.00; £127.00 for libraries and institutions; US\$65.70; \$A87.00; £42.35 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 or by VISA or Mastercard (phone: +44 114 222 3922; fax: +44 114 272 9782).

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. An updated version of the guide, with LATEX style files, can be obtained in electronic form on http://www.shef.ac.uk/~apt or on PC-compatible disk 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 0.70 per copy, plus .20 per page is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923, USA. 0021-9002/97 0.70+.20.

Research Papers

- 1 HAIJUN LI AND MOSHE SHAKED. Ageing first-passage times of Markov processes: a matrix approach
- 14 RONG-RONG CHEN. An extended class of time-continuous branching processes
- 24 SHOOU-REN HSIAU. Compound Poisson limit theorems for Markov chains
- 35 G. O. ROBERTS, S. D. JACKA AND P. K. POLLETT. Non-explosivity of limits of conditioned birth and death processes
- 46 PAULINE SCHRIJNER AND ERIK A. VAN DOORN. Weak convergence of conditioned birthdeath processes in discrete time
- 54 LIQUN WANG AND KLAUS PÖTZELBERGER. Boundary crossing probability for Brownian motion and general boundaries
- 66 S. E. GRAVERSEN AND G. PEŠKIR. On Wald-type optimal stopping for Brownian motion
- 74 ROBERT LUND AND WALTER SMITH. A comparison of convergence rates for three models in the theory of dams
- 84 Y. L. TONG. Some majorization orderings of heterogeneity in a class of epidemics
- 94 M. A. GUERRY. Properties of calculated predictions of grade sizes and the associated integer valued vectors
- 101 E. B. FOSAM AND D. N. SHANBHAG. Variants of the Choquet-Deny theorem with applications
- 107 PIERCESARE SECCHI. Two-person red-and-black stochastic games
- 127 G. E. WILLMOT AND XIAODONG LIN. Simplified bounds on the tails of compound distributions
- 134 BRUCE CALVERT, WIREMU SOLOMON AND ILZE ZIEDINS. Braess's paradox in a queueing network with state-dependent routing
- 155 N. G. BEAN, F. P. KELLY AND P. G. TAYLOR. Braess's paradox in a loss network
- 160 J. L. COLEMAN, W. HENDERSON, C. E. M. PEARCE AND P. G. TAYLOR. A correspondence between product-form batch-movement queueing networks and single-movement networks
- 176 DUAN-SHIN LEE. Analysis of a two-queue model with Bernoulli schedules
- 192 ANYUE CHEN AND ERIC RENSHAW. The *M*/*M*/1 queue with mass exodus and mass arrivals when empty
- 208 SØREN ASMUSSEN AND CLAUDIA KLÜPPELBERG. Stationary *M/G/*1 excursions in the presence of heavy tails
- 213 HELMUT WILLIE. A note on single server loss systems with a superposition of inputs
- 223 J. R. ARTALEJO AND A. GOMEZ-CORRAL. Steady state solution of a single-server queue with linear repeated requests
- 234 LAM YEH. The rate of occurrence of failures
- 248 USHIO SUMITA AND YASUSHI MASUDA. Tandem queues with bulk arrivals, infinitely many servers and correlated service times
- 258 SHOKRI Z. SELIM. Time-dependent solution and optimal control of a bulk service queue
- 267 C. COSTANTINI AND F. SPIZZICHINO. Explicit solution of an optimal stopping problem: the burn-in of conditionally exponential components

Short Communications

- 283 HARSHINDER SINGH AND R. S. SINGH. On allocation of spares at component level versus system level
- 288 PIETER C. ALLAART. An invariant-sum characterization of Benford's law

Published by the **Applied Probability Trust** in association with the **London Mathematical Society** Copyright © 1997 by the **Applied Probability Trust** ISSN 0021–9002