## **SUBSCRIPTION RATES**

Subscription rates (post free) for volume 40 (2003) of the Journal of Applied Probability are as follows:

US\$223.00; \$A413.00; £145.50 for libraries and institutions;

US\$74.25; \$A137.75; £48.50 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, University of Sheffield, 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 2000 Mathematics Subject Classification.

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.appliedprobability.org or on PC-compatible disk from the Applied Probability Office. For instructions on how papers may be submitted electronically, please consult the notes for contributors at the above URL.

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, University of Sheffield, Sheffield S3 7RH, UK.

### **COPYRIGHT**

The copyright of all published papers is vested in the Trust. When a paper is accepted for publication, the Trust asks the author(s) to assign copyright to the Trust by signing a form in which the terms of copyright are listed. 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 (http://www.copyright.com). 0021–9002/03 \$00.70 + .20.

## Volume 40 Number 2

### Research Papers

- 273 J. XUE AND ATTAHIRU SULE ALFA. Accurate bounds for the asymptotic constant in a statistical multiplexer with homogeneous generalized binary Markov sources
- 293 AMY R. WARD AND NICHOLAS BAMBOS. On stability of queueing networks with job deadlines
- 305 TAVA LENNON OLSEN AND R. D. VAN DER MEI. Polling systems with periodic server routeing in heavy traffic: distribution of the delay
- 327 XIANPING GUO AND ONÉSIMO HERNÁNDEZ-LERMA. Zero-sum games for continuoustime Markov chains with unbounded transition and average payoff rates
- JAMES C. FU, LIQUN WANG AND W. Y. WENDY LOU. On exact and large deviation approximation for the distribution of the longest run in a sequence of two-state Markov dependent trials
- 361 A. IRLE. Stochastic ordering for continuous-time processes
- 376 BERO ROOS. Poisson approximation of multivariate Poisson mixtures
- 391 KAI W. NG, QIHE TANG, JIAAN YAN AND HAILIANG YANG. Precise large deviations for the prospective-loss process
- 401 I. HIGUERAS, J. MOLER, F. PLO AND M. SAN MIGUEL. Urn models and differential algebraic equations
- 413 TAMÁS SZABADOS AND BALÁZS SZÉKELY. An exponential functional of random walks
- 427 S. MERCIER, D. CELLIER AND D. CHARLOT. An improved approximation for assessing the statistical significance of molecular sequence features
- 442 EFRAIM SHMERLING AND KENNETH J. HOCHBERG. Solution of jump parameter systems of differential and difference equations with semi-Markov coefficients
- 455 ULRICH HERKENRATH. On the uniform ergodicity of Markov processes of order 2
- 473 THOMAS H. SAVITS. Preservation of generalized bathtub-shaped functions
- 485 HENRY W. BLOCK, THOMAS H. SAVITS AND ESHETU T. WONDMAGEGNEHU. Mixtures of distributions with increasing linear failure rates

#### Short Communications

- 505 PAUL FEARNHEAD. Haplotypes: the joint distribution of alleles at linked loci
- 513 ILAN ADLER, SHMUEL OREN AND SHELDON M. ROSS. The coupon-collector's problem revisited
- JONGHO BAE, SUNGGON KIM AND EUI YONG LEE. Average cost under the  $P_{\lambda\tau}^M$  policy in a finite dam with compound Poisson inputs