

Advances in Applied Probability

The Editorial Board would like to encourage the submission to the *Advances* of review papers summarising and coordinating recent results in any of the fields of applied probability.

In addition to these review papers, *Advances* is also designed to be a medium of publication for (1) longer research papers in applied probability, which may include expository material, (2) expository papers on branches of mathematics of interest to probabilists, (3) papers outlining areas in the biological, physical, social and technological sciences in which probability models can be usefully developed, (4) papers in applied probability presented at conferences which do not publish their proceedings, and finally, (5) letters to the editor on any appropriate topic in applied probability.

In short, the main function of *Advances* is to define areas of recent progress and potential development in applied probability. As with the *Journal of Applied Probability*, *Advances* undertakes to publish papers accepted by the Editors within 15 months of their submission; letters to the editor will normally be published more rapidly.

Volume 23 No. 3 of *Advances* contains the following papers:

P. J. DONNELLY, W. J. EWENS AND S. PADMADISASTRA. Functionals of random mappings: exact and asymptotic results

PAUL JOYCE. Estimating the frequency of the oldest allele: a Bayesian approach

PETER HALL, J. W. KAY AND D. M. TITTERINGTON. On estimation of noise variance in two-dimensional signal processing

COLIN R. GOODALL AND KANTI V. MARDIA. A geometrical derivation of the shape density

COLM ART O'CONNOR. Phase-type distributions and invariant polytopes

MATHEW D. PENROSE. On a continuum percolation model

LAJOS TAKÁCS. A Bernoulli excursion and its various applications

CHERN-CHING CHAO AND NORMAN C. SEVERO. Distributions of ballot problem random variables

N. H. BINGHAM. Fluctuation theory for the Ehrenfest urn

F. THOMAS BRUSS AND JAMES B. ROBERTSON. 'Wald's lemma' for sums of order statistics of i.i.d. random variables

LAWRENCE A. SHEPP, GORDON SIMONS AND YI-CHING YAO. On a problem of ammunition rationing

J. GEORGE SHANTHIKUMAR AND DAVID D. YAO. Bivariate characterization of some stochastic order relations

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Cheques made out on U.S., U.K. and Australian banks will be acceptable: they should be made payable to *Applied Probability*, and sent to:

Executive Editor, Applied Probability,
Department of Probability and Statistics,
The University, Sheffield S3 7RH, England.

THE MATHEMATICAL SCIENTIST (TMS)

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The mathematics of darts (or where to aim), by C. Atkinson and R. Craster
Embedding procedures for discrete problems in probability, by G. Blom and L. Holst
On harmonic means and variances, by E. A. Catchpole and A. W. Plank
Simulations of enhanced oil recovery, by M. K. Cham and J. R. Blake
Lagrange interpolation polynomials based on equidistant nodes, by T. M. Mills and S. J. Smith
Problems of handling messy field data for engineering decision-making, by E. Moore, J. J. Sharp and L. M. Lye
Double Youden rectangles of size 6×11 , by D. A. Preece
Point processes and Tauberian theory, by S. Resnick
A generalized birthday problem, by D. Sandell
Renewal process proof for the limit of the Markov binomial distribution, by Y. H. Wang and W. J. Bühler
Stochastic modelling of dose-response for single cells in radiation experiments, by G. L. Yang and C. E. Swenberg

Orders and requests for further information should be sent to

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K. F. TURKMAN

The Annals of Applied Probability

Vol. 1

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No. 1

Articles

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Numerical methods and a queueing application J. G. DAI AND J. M. HARRISON
Geometric bounds for eigenvalues of Markov chains PERSI DIACONIS AND DANIEL STROOCK
Eigenvalue bounds on convergence to stationarity for nonreversible Markov chains,
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Loud shot noise R. A. DONEY AND GEORGE L. O'BRIEN
Queues with server vacations and Lévy processes
with secondary jump input OFFER KELLA AND WARD WHITT
On the properties of a tree-structured server process
J. KOMLÓS, A. ODLYZKO, L. OZAROW AND L. A. SHEPP
Implicit renewal theory and tails of solutions of random equations CHARLES M. GOLDIE
Forcing a stochastic process to stay in or to leave a given region MARIO LEFEBVRE

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Papers should be submitted in quadruplicate, and authors are encouraged to follow the familiar editorial conventions of the two other *IMS Annals*. In addition to welcoming papers in all the traditional areas of applied probability, the new *Annals* particularly hopes to attract work that develops and deepens the interplay of probability and the fields of computer science, finance, network modeling, and biology.

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To Alain-Sol SZNITMAN (ETH, Zurich, Switzerland), for his work on the development of chaos in stochastic systems.

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

All enquiries about the *Journal*, as well as other subscriptions, should be sent to the Executive Editor, Miss M. Hitchcock, Department of Probability and Statistics, The University, Sheffield S3 7RH, England. The price of back numbers varies from volume to volume, and enquiries should be sent to the Executive Editor. Cheques, money orders, etc. should be made out to *Applied Probability*; cheques on U.S., U.K. and Australian banks will be acceptable.

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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.

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Papers submitted to the *Journal of Applied Probability* 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 of the *Journal* not to accept for publication papers which cannot appear in print within 15 months of the date of receipt of the final version. Authors will receive 50 reprints of their papers free, and joint authors a proportional share of this number. Additional reprints will be provided 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 in the *Journal*. Scripts should be typewritten, using double spacing, and at least one copy should be on one side of the paper only. Each paper should be accompanied by

- (i) a short abstract of approximately 4–10 lines giving a non-mathematical description of the subject matter and results;
- (ii) a list of keywords detailing the contents for the purpose of computerised information retrieval;
- (iii) primary and secondary classifications using 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 on application to the Applied Probability Office.

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