

VOLUME 12 NUMBER 4 DECEMBER 1980

## Advances in Applied Probability

This is a companion publication to the Journal of Applied Probability published by the Applied Probability Trust. It contains review and expository papers in Applied Probability, as well as mathematical and scientific papers of interest to probabilists. An annual volume of approximately 800 pages will be published in four numbers appearing in March, June, September and December.

## Submission of papers

Submissions to the Advances may be of five kinds:
(1) review papers;
(2) longer research papers in Applied Probability, which may include expository material;
(3) expository papers on branches of mathematics of interest to probabilists;
(4) papers outlining areas in the biological, physical, social and technological sciences in which probability models can be usefully developed;
(5) papers in Applied Probability presented at conferences which do not publish their proceedings.

Authors are requested to consult the Notes for Contributors on the inside back cover.
$\begin{array}{ll}\text { Editor-in-Chief: } \\ \text { J. GANI } & \text { CSIRO Division of Mathematics and Statistics, P.O. Box 1965, } \\ & \text { Canberra City, A.C.T. 2601, Australia. }\end{array}$
Executive Editor:
MAVIS HITCHCOCK. Applied Probability Office, Department of Probability and Statistics, The University, Sheffield S3 7RH, England.

Technical Editor:<br>KATHLEEN M. LYLE<br>Editors:<br>E. SPARRE ANDERSEN Københauns Universitets Matematiske Institut, H. C. Ørsted Institutet, Universitetsparken 5, København Ø, Denmark.<br>V. D. BARNETT Department of Probability and Statistics, The University, Sheffield S3 7RH, England.<br>D. BLACKWELL Department of Statistics, University of California, Berkeley, California 94720, U.S.A.<br>V. R. CANE Statistical Laboratory, Department of Mathematics, The University, Manchester M13 9PL, England.<br>J. W. COHEN Department of Mathematics, University of Utrecht, De Uithof, Budapestlaan 6, Utrecht, Holland.<br>B. GNEDENKO Sector 1, Flat 75, Moscow University B-234, U.S.S.R.<br>E. J. HANNAN Department of Statistics, Australian National University, P.O. Box 4 , Canberra, Australia 2600.<br>C. C. HEYDE CSIRO Division of Mathematics and Statistics, P.O. Box 1965, Canberra City, A.C.T. 2601, Australia.<br>J. KEILSON Department of Statistics, University of Rochester, Rochester, N.Y. 14627, U.S.A.<br>D. G. KENDALL Statistical Laboratory, Cambridge University, Cambridge CB2 1SB, England.<br>J. F. C. KINGMAN Mathematical Institute, 24-29 St. Giles, Oxford OX1 3LB, England. K. KRICKEBERG Université René Descartes, U.E.R. de Mathématiques, Logique Formelle et Informatique, Sorbonne, 12 Rue Cujas, F-75 Paris V, France.<br>R. M. LOYNES Department of Probability and Statistics, The University, Sheffield S3 7RH, England.<br>P. A. P. MORAN Department of Statistics, Australian National University, P.O. Box 4, Canberra, Australia 2600.<br>J. NEVEU Université Paris VI, Laboratoire de Calcul des Probabilités, 9, quai Saint-Bernard-tour 56, 75230-Paris CEDEX 05, France.<br>K. R. PARTHASARATHY Indian Statistical Institute, 7, S.J.S. Sansanwal Marg, New Delhi110 029, India.<br>N. U. PRABHU Department of Operations Research, Cornell University, Ithaca, N.Y. 14850, U.S.A.<br>R. PYKE Department of Mathematics, University of Washington, Seattle, Washington 98105, U.S.A.<br>C. A. B. SMITH Galton Laboratory, University College, Wolfson House, 4 Stephenson Way, London NW1 2HE, England.<br>L. TAKÁCS Department of Mathematics, Case Western Reserve University, University Circle Cleveland, Ohio 44106, U.S.A. online by Cambridge University Press

Volume $12 \quad$ No. 4
825 GAIL IVANOFF. The branching random field
848 HARRY KESTEN. On the time constant and path length of firstpassage percolation

864 J. THEODORE COX. The time constant of first-passage percolation on the square lattice

880 J. ANSELL, A. BENDELL AND S. HUMBLE. Nested renewal processes

893 PRISCILLA GREENWOOD AND JIM PITMAN. Fluctuation identities for Lévy processes and splitting at the maximum

903 S. KOTZ AND D. N. SHANBHAG. Some new approaches to probability distributions

922 PETER FINDEISEN. Asymptotic properties of a certain class of Bush-Mosteller learning models

942 SHIRISH D. CHIKTE. Optimal sequential selection and resource allocation under uncertainty

958 DONALD A. BERRY AND BERT FRISTEDT. Two-armed bandits with a goal, II. Dependent arms

SØREN GLUD JOHANSEN AND SHALER STIDHAM JR. Control of arrivals to a stochastic input-output system

1000 J. WALRAND AND P. VARAIYA. Sojourn times and the overtaking condition in Jacksonian networks

