

THE ANNALS OF STATISTICS

VOLUME 3

MARCH 1975

No. 2

Articles

- Adaptive maximum likelihood estimators of a location parameter
CHARLES J. STONE
- Weak convergence of empirical distribution functions of random variables
subject to perturbations and scale factors
J. S. RAO AND J. SETHURAMAN
- Direct products and linear models for complete factorial tables
SHELBY J. HABERMAN
- A restricted subset selection approach to ranking and selection problems
THOMAS J. SANTNER
- Consistency in generalized isotonic regression
TIM ROBERTSON AND F. T. WRIGHT
- Maximum likelihood estimation in the birth-and-death process
NIELS KEIDING
- Locally most powerful sequential tests..... ROBERT H. BERK
- Local asymptotic power of quadratic rank tests for trend
RUDOLF BERAN
- Inequalities of s -ordered distributions..... M. J. LAWRENCE
- Normal-theory approximations to tests for linear hypotheses
D. R. JENSEN AND L. S. MAYER

Short Communications

- On the nonexistence of Knut Vik designs for all even orders
A. HEDAYAT AND W. T. FEDERER
- Admissibility of the best invariant estimator of one coordinate of a location
vector..... STEPHEN L. PORTNOY
- Minimax interval estimators of location parameters
BENJAMIN ZEHNWIRTH
- Relationships between the UMVU estimators of the mean and median of a
function of a normal distribution..... FARHAD MEHRAN
- Tests for the general linear hypothesis under the multiple design multi-
variate linear model..... LYMAN McDONALD
- Central and noncentral distributions of Wilks' statistic in MANOVA as
mixtures of incomplete beta functions
MARIETTA J. TRETTER AND G. WILLIAM WALSTER
- Upper confidence and fiducial limits to the range of several means
B. CAUSEY
- Strong admissibility of a set of confidence intervals for the mean of a finite
population..... V. M. JOSHI
- On admissibility and uniform admissibility in finite population sampling
A. J. SCOTT
- On a class of uniformly admissible estimators for finite populations
RM. SEKKAPPAN AND M. E. THOMPSON
- A note on sampling with replacement..... E. BENTON COBB
- Upper and lower posterior probabilities for discrete distributions
ROBERT KLEYLE
- Approximate Bayes solutions to some nonparametric problems
M. GOLDSTEIN
- Arguments for Fisher's permutation test
ANDERS ODEN AND HANS WEDEL
- On the use of ranks for testing the coincidence of several regression lines
J. N. ADICHIE

• Contents continued on back cover

CATALOG OF PUBLICATIONS OF THE INSTITUTE OF MATHEMATICAL STATISTICS

ANNALS INDEX

The Annals of Mathematical Statistics, Indexes to Volumes 1-31, 1930-60, edited by J. Arthur Greenwood, Ingram Olkin and I. Richard Savage, 1962, xiii+658 pp. Subscribers Cost—\$10.00, Members Cost—\$5.00.

Order directly from Robert Elashoff, Treasurer, IMS, Business Office, 1367 Laurel Street, San Carlos, California 94070.

STATISTICAL RESEARCH MONOGRAPHS

This series is sponsored jointly by the Institute of Mathematical Statistics and the University of Chicago. Discount to members of IMS is 10 percent.

The passage problem for a stationary Markov chain by J. H. B. Kemperman, 1961, 127 pp. List price—\$5.00.

Statistical inference for Markov processes by Patrick Billingsley, 1961, 75 pp. List price—\$4.75.

Sequential identification and ranking procedures by Robert E. Bechhofer, Jack Kiefer and Milton Sobel, 1968, xvii+420 pp. List price—\$17.50.

The analysis of frequency data by Shelby J. Haberman, 1974, 432 pp. List price—\$20.00.

Order directly from the University of Chicago Press, 11030 S. Langley, Chicago, Illinois 60628.

SELECTED TABLES IN MATHEMATICAL STATISTICS

This series of volumes is prepared by the Committee of Mathematical Tables of the Institute of Mathematical Statistics and is published by the American Mathematical Society for the IMS. Discount to members of IMS is 25 percent.

Selected tables in mathematical statistics, Vol. I, edited by H. L. Harter and D. B. Owen, 1970, vi+405 pp. \$8.60.

Selected tables in mathematical statistics, Vol. II, edited by H. L. Harter and D. B. Owen, 1974, approximately vii+350 pp. \$14.10

Order directly from the American Mathematical Society, P.O. Box 6248, Providence, Rhode Island 02904, Attention: Sales Department.

CONTENTS—Continued from cover 3

Convergence of the reduced empirical process for non-i.i.d. random vectors	GEORG NEUHAUS
An approximate inverse for the covariance matrix of moving average and autoregressive processes.....	PAUL SHAMAN
A note on the consistency of maximum likelihood estimates for finite families of stochastic processes.....	P. E. CAINES
Markov decision processes with a new optimality criterion: Continuous time.....	STRATON C. JAQUETTE
Lower semicontinuous stochastic games with imperfect information	SAILES K. SENGUPTA