

*For those of you who need to know what's happening in statistics...*

***The Institute of Mathematical Statistics***  
***and***  
***The American Statistical Association***

announce publication of Volume 3 of

**CURRENT INDEX TO STATISTICS:  
APPLICATIONS, METHODS AND  
THEORY**

*An annual computerized index to the statistical literature*

**Coverage**—Over 5,000 articles in “core” and “related” journals for 1977 are indexed. Author index and index by key words. Example of subject index (complete reference to journal, volume, pages, etc., is given):

*Important word*

Asymptotic Properties of Non-linear Least Squares Estimators • R. I. Jennrich  
Interval Estimation of Non-linear Parametric Functions • Halpern, Mantel  
Interval Estimation of Non-linear Parametric Functions, II • M. Halpern  
On a Problem in Non-linear Prediction Theory • J. B. Robertson  
Convergence in Non-linear Regression • T. Tornheim  
Non-linear Regression with Minimal Assumptions • H. M. Wagner  
Non-linear  
Discrimination Among Mechanistic Models • G.E.P. Box  
New Analysis of Variance Model for Nonadditive Data • J. Mandel  
Simplified Experimental Design • M. J. Box

*Key word*

**Who should subscribe**—All individuals who spend any significant fraction of their time doing statistics. Anyone who spends more than *one hour per year* looking for an article on a particular topic in statistics or redeveloping some technique that already exists in the literature will find it cost effective to have a personal copy of this index.

**Editor**—Brian L. Joiner, University of Wisconsin. **Assistant Editor**—Jessie M. Gwynne

**Management Committee**—Donald A. Gardiner, Chairman; Robert M. Elashoff, Seymour Geisser, David Hoaglin, David L. Wallace

**Subscription Rates**— \$9.00 for members of the two sponsoring societies  
\$12.00 for other individuals  
\$18.00 for organizational/library subscriptions  
(Volumes 1 & 2, covering 1975 and 1976 journals, available at the same rate.  
Volume 4 to be published in 1979; see rates on back cover.)

**Send orders and remittance to**—

**The Institute of Mathematical Statistics**  
**Business Office**  
**3401 Investment Blvd. Suite 6**  
**Hayward, California 94545**

# ANNALS OF STATISTICS

Vol. 7

September 1979

No. 5

## Articles

- Permutation tests for directional data ..... JON A. WELLNER
- Asymptotic deficiencies of one-sample rank tests under restricted adaptation ..... W. ALBERS
- A differential for L-statistics ..... DENNIS D. BOOS
- A heuristic method for determining admissibility of estimators with applications ..... LAWRENCE D. BROWN
- Joint admissibility of the sample means as estimators of the means of finite populations ..... V. M. JOSHI
- Constructing all smallest simultaneous confidence sets in a given class, with applications to MANOVA ..... ROBERT A. WIJSMAN
- Asymptotic properties of maximum likelihood estimators based on conditional specifications ..... PRANAB KUMAR SEN
- Asymptotic optimality of certain sequential estimators ..... Y. VARDI
- Asymptotic optimal sequential estimation: the Poisson case  
Y. VARDI
- Conditional probability integral transformations and goodness-of-fit tests for multivariate normal distributions  
S. RINCON-GALLARDO, C. P. QUESENBERRY AND  
FEDERICO J. O'REILLY
- On the asymptotic distribution of  $k$ -spacings with applications to goodness-of-fit tests ..... GUIDO E. DEL PINO
- Comparison of experiments and information measures  
PREM K. GOEL AND MORRIS H. DEGROOT
- Design of optimal control for a regression problem  
DER-SHIN CHANG
- Bernoulli one-armed bandits—arbitrary discount sequences  
DONALD A. BERRY AND BERT FRISTEDT
- Estimation for autoregressive processes with unit roots  
DAVID P. HASZA AND WAYNE A. FULLER
- Monotone regression and covariance structure ..... GERALD SHEA
- Admissible decision rules for the compound decision problem: the two-action two-state case ..... JAMES INGLIS

## Short Communications

- The  $L_1$  convergence of kernel density estimates  
L. P. DEVROYE AND T. J. WAGNER
- On Bayes sequential tests regarding two Koopman-Darmois distributions: bounds on the maximum sample size  
J. E. MANN AND T. L. BRATCHER
- On a screening problem ..... JOSEPH A. YAHAV
- A family of minimax estimators in some multiple regression problems  
Y. TAKADA

# CATALOG OF PUBLICATIONS OF THE INSTITUTE OF MATHEMATICAL STATISTICS

## ANNALS INDEX

*The Annals of Mathematical Statistics, Index to Volumes 1-31, 1930-60*, edited by J. Arthur Greenwood, Ingram Olkin and I. Richard Savage, 1962. Nonmember Subscriber Cost—\$15.00, Member Cost—\$7.00.

*Current Index to Statistics: Applications, Methods and Theory*, edited by Brian L. Joiner. Volumes 1-3, 1975-1977. Nonmember Subscriber Cost—\$18.00, Member Cost—\$9.00. Volume 4, 1978. Nonmember Subscriber Cost—\$22.00, Member Cost—\$11.00.

Order directly from Heebok Park, Treasurer, IMS Business Office, 3401 Investment Blvd., Suite 6, Hayward, California 94545.

## 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 20 percent.

*The passage problem for a stationary Markov chain* by J. H. B. Kemperman, 1961, 127 pp. List price—\$7.00.

*Statistical inference for Markov processes* by Patrick Billingsley, 1961, 75 pp. List price—\$4.95.

*Sequential identification and ranking procedures* by Robert E. Bechhofer, Jack Kiefer and Milton Sobel, 1968, xvii+420 pp. List price—\$20.00.

*The analysis of frequency data* by Shelby J. Haberman, 1974, 432 pp. List price—\$15.00 (Available only as Midway Reprint Paperback)

Order directly from the University of Chicago Press, 11030 S. Langley Ave., Chicago, Illinois 60637.

## 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. \$13.20

*Selected tables in mathematical statistics, Vol. II*, edited by H. L. Harter and D. B. Owen, 1974, viii+338 pp. \$16.40

*Selected tables in mathematical statistics, Vol. III*, edited by H. L. Harter and D. B. Owen with J. M. Davenport, viii+424 pp. \$21.60

*Selected tables in mathematical statistics, Vol. IV*, edited by D. B. Owen and R. E. Odeh with J. M. Davenport, x+309 pp. \$18.00

*Selected tables in mathematical statistics, Vol. V*, edited by D. B. Owen and R. E. Odeh with J. M. Davenport, viii+263 pp. \$16.80

Send prepaid orders directly to the American Mathematical Society, P.O. Box 1571, Providence, Rhode Island 02901, Attention: Sales Department.

---