## THE ANNALS of MATHEMATICAL STATISTICS

FOUNDED AND EDITED BY H. C. CARVER, 1930–1938 EDITED BY S. S. WILKS, 1938–1949

THE OFFICIAL JOURNAL OF THE INSTITUTE OF MATHEMATICAL STATISTICS

Contents	PAGE
On the Construction of Group Divisible Incomplete Block Designs. R. C. Bose, S. S. Shrikhande, and K. N. Bhattacharya	167
The Basic Theorems of Information Theory. BROCKWAY McMil- LAN	196
On a Heuristic Method of Test Construction and Its Use in Multi- variate Analysis. S. N. Roy	220
On a Class of Problems Related to the Random Division of an Interval. D. A. DARLING	239
Sequential Decision Problems for Processes with Continuous Time Parameter. Testing Hypotheses. A. Dvoretzky, J. Kiefer, AND J. Wolfowitz	
Equivalent Comparisons of Experiments. DAVID BLACKWELL	265
Testing One Simple Hypothesis Against Another. LIONEL WEISS.	273
On the Exact Evaluation of the Variances and Covariances of Order Statistics in Samples from the Extreme-Value Distribution.  JULIUS LIEBLEIN	282
Generalized Hit Probabilities with a Gaussian Target, II. D. A. S. Fraser	288
Notes:	
A Class of Minimax Tests for One-Sided Composite Hypotheses. S. G. Allen, Jr.	295
Note on Computation of Orthogonal Predictors. Bradford F. Kimball	299
On the Asymptotic Normality of Certain Rank Order Statistics. MEYER DWASS	303
Note on the Variation of Means. Casper Goffman	307
On Mill's Ratio for the Type III Population. DES RAJ	309
News and Notices	313
Publications Received	318

Vol. 24, No. 2 — June, 1953

## THE ANNALS OF MATHEMATICAL STATISTICS

EDITOR E. L. LEHMANN

DAVID BLACKWELL J. L. HODGES, JR. ASSOCIATE EDITORS
WASSILY HOEFFDING
WILLIAM G. MADOW

ALEXANDER M. MOOD J. WOLFOWITZ

WITH THE COOPERATION OF

Z. W. BIRNBAUM R. C. BOSE KAI LAI CHUNG J. F. DALY J. L. DOOB T. E. HABRIS PAUL G. HOEL J. KIEFER
WILLIAM H. KRUSKAL
HOWARD LEVENE
H. B. MANN
G. E. NOETHER
EDWARD PAULSON
M. PEISAKOFF

H. E. ROBBINS
S. N. ROY
L. J. SAVAGE
HERBERT SOLOMON
CHARLES M. STEIN
LIONEL WEISS
MAX A. WOODBURY

Published quarterly by the Institute of Mathematical Statistics in March, June, September and December at Baltimore, Maryland.

## INSTITUTE OF MATHEMATICAL STATISTICS

General Office: Department of Mathematics, Michigan State College, East Lansing, Michigan

K. J. Arnold, Secretary-Treasurer

This address should be used for all communications concerning membership, subscriptions, changes of address, back numbers, etc., but *not* for editorial correspondence. Changes in mailing address which are to become effective for a given issue should be reported to the Secretary on or before the 15th of the month preceding the month of that issue.

Editorial Office:

Statistical Laboratory, University of California, Berkeley 4, California

E. L. Lehmann, Editor

Manuscripts should be submitted to this address; each manuscript should be typewritten, double-spaced with wide margins, and the original copy should be submitted (preferably with one additional copy). Dittoed and mimeograped papers are acceptable if they are completely legible and printed on paper that will take corrections. Footnotes should be reduced to a minimum and whenever possible replaced by a bibliography at the end of the paper; formulae in footnotes should be avoided. Figures, charts, and diagrams should be professionally drawn on plain white paper or tracing cloth in black India ink twice the size they are to be printed. Authors are requested to keep in mind typographical difficulties of complicated mathematical formulae. Authors will ordinarily receive only galley proofs. Fifty reprints without covers will be furnished free. Additional reprints and covers furnished at cost.

Subscription Price: \$12 per year in the U. S. and Canada; \$10 elsewhere. Single issues \$3.50. Back numbers are available at \$12 per volume or \$3.50 per issue.

COMPOSED AND PRINTED AT THE WAVERLY PRESS, Inc., Baltimore, Maryland, U. S. A.