## IMS LECTURE NOTES — MONOGRAPH SERIES

This series provides an avenue for the rapid, but carefully refereed, publication of important research results in comprehensive form and expository style. These volumes should be of great value to researchers and advanced students in statistics, probability, and related fields. The series editor is Shanti S. Gupta, Purdue University.

4

#### ZONAL POLYNOMIALS

by Akimichi Takemura

A self-contained development of zonal polynomials in the framework of standard multivariate analysis.

Zonal polynomials have been used extensively in the study of noncentral multivariate distributions. This easily understood treatment uses only the standard tools of linear algebra and multivariate normal distribution theory.

110 pages List price \$15 IMS members \$9

# 5 INEQUALITIES IN STATISTICS AND PROBABILITY

edited by Y. L. Tong

Proceedings of the Symposium on Inequalities in Statistics and Probability held in Lincoln, Nebraska during October 1982.

This volume reports on the recent rapid growth in the field of inequalities due, in part, to widespread applications in reliability theory, in multivariate nonnormal analysis, and in optimization and constraint problems. The volume contains thirty expository and research papers by leaders in the field.

263 pages List price \$25 IMS members \$15

### THE LIKELIHOOD PRINCIPLE

by James Berger and Robert Wolpert

A comprehensive presentation and criticism of the likelihood principle and its generalizations.

This book provides a non-technical development of the likelihood principle with attention to some of its surprising implications for such areas as randomization analysis, censoring, significance testing, and sequential analysis. The authors also discuss generalizations and implementations of the likelihood principle.

217 pages List price \$25 IMS members \$15

#### ADDI' Previou

#### **ADDITIONAL TITLES**

Previously published: Volume 1, Essays on the Prediction Process by Frank Knight (\$15/members \$9); Volume 2, Survival Analysis edited by John Crowley and Richard A. Johnson (\$25/members \$15); Volume 3, Empirical Processes by Peter Gaenssler (\$20/members \$12). Forthcoming: Fundamentals of Statistical Exponential Families by L. Brown, Approximate Computations of Expectations by C. Stein, Adaptive Statistical Procedures and Related Topics edited by T. L. Lai and J. Van Ryzin, Differential Geometry in Statistical Inference by S. Amari, O. Barndorff-Nielsen, R. Kass, S. Lauritzen, and C. R. Rao, and Group Theory in Statistics by P. Diaconis.

Prepaid orders for individual volumes and requests for standing order enrollment (eligible for 20% prepublication discounts from list prices) should be sent to

Institute of Mathematical Statistics 3401 Investment Blvd. #7 Hayward, CA 94545 (USA)

#### THE INSTITUTE OF MATHEMATICAL STATISTICS

(Organized September 12, 1935)

The purpose of the Institute of Mathematical Statistics is to encourage the development, dissemination, and application of mathematical statistics.

#### OFFICERS AND EDITORS

#### **President:**

Paul Meier, Department of Statistics, University of Chicago, 5734 University Avenue, Chicago, Illinois 60637

#### **President-Elect:**

Ronald Pyke, Department of Mathematics GN-50, University of Washington, Seattle, Washington 98195

#### **Past President:**

Oscar Kempthorne, Department of Statistics, 111B Snedecor Hall, Iowa State University, Ames, Iowa 50011

#### **Executive Secretary:**

Francisco J. Samaniego, Division of Statistics, 469 Kerr Hall, University of California, Davis, California 95616

#### Treasurer:

Nicholas P. Jewell, Group in Biostatistics, University of California, Berkeley. *Please send correspondence to*: IMS Business Office, 3401 Investment Boulevard #7, Hayward, California 94545

#### **Program Secretary:**

Richard A. Johnson, Department of Statistics, University of Wisconsin, 1210 West Dayton Street, Madison, Wisconsin 53706

Editor: The Annals of Statistics

Willem R. van Zwet, Department of Mathematics, University of Leiden, P.O. Box 9512, 2300 RA Leiden, The Netherlands

Editor: The Annals of Probability

Thomas M. Liggett, Department of Mathematics, University of California, Los Angeles, California 90024

Executive Editor: Statistical Science

Morris H. DeGroot, Department of Statistics, Carnegie-Mellon University, Pittsburgh, Pennsylvania 15213

Editor: The IMS Bulletin

William C. Guenther, Department of Statistics, University of Wyoming, Laramie. *Please send correspondence to*: Box 3332 University Station, Laramie, Wyoming 82071

Editor: The IMS Lecture Notes—Monograph Series

Shanti S. Gupta, Department of Statistics, Purdue University, West Lafayette, Indiana 47907

#### **Managing Editor:**

Paul Shaman, Department of Statistics, University of Pennsylvania, Philadelphia, Pennsylvania 19104

**Journals.** The scientific journals of the Institute are *The Annals of Statistics, The Annals of Probability*, and *Statistical Science*. The news organ of the Institute is *The Institute of Mathematical Statistics Bulletin*.

Individual, Institutional, and Corporate Memberships. All individual members receive Statistical Science and The IMS Bulletin for a basic annual dues rate of \$30. Individual members may elect to receive one Annals for an additional \$10 or both Annals for an additional \$20. Dues allocations to each journal are set by Council resolution. Of the total dues paid, \$8 is allocated to The IMS Bulletin and the remaining amount is allocated equally among the scientific journals received. Memberships are available at a reduced rate (40% of regular rates) for full-time students, permanent residents of developing countries, and retired members. Retired members may also elect to receive the Bulletin only for \$10. Institutional memberships are available to nonprofit organizations at \$225 per year and corporate memberships are available to other organizations at \$500 per year. Institutional and corporate memberships include two multiple-readership copies of all IMS journals in addition to other benefits specified for each category (details available from the IMS Business Office).

Individual and General Subscriptions. Subscriptions are available on a calendar-year basis. For 1986, all subscriptions to one or both Annals automatically include one subscription to Statistical Science. Individual subscriptions are for the personal use of the subscriber and must be in the name of, paid directly by, and mailed to an individual. Individual subscriptions for 1986 are available to both Annals and Statistical Science (\$79), one Annals and Statistical Science (\$52), Statistical Science only (\$25), and The IMS Bulletin (\$15). General subscriptions are for libraries, institutions, and any multiple-readership use. General subscriptions for 1986 are available to both Annals and Statistical Science (\$155), The Annals of Statistics and Statistical Science (\$85), The Annals of Probability and Statistical Science (\$80), Statistical Science only (\$40), and The IMS Bulletin (\$20). Air mail rates for overseas delivery of general subscriptions are \$40 per title.

Correspondence. Mail to IMS should be sent to the IMS Business Office (membership, subscriptions, claims, copyright permissions, advertising, back issues), the Editor of the appropriate journal (submissions, editorial content), or the Managing Editor (production).

# The Annual Index to the Statistical Literature of the World

# **CURRENT INDEX TO STATISTICS**

# APPLICATIONS, METHODS AND THEORY VOLUME 10 (1984) – NOW AVAILABLE

- Nearly 8400 articles from "core" and "related" journals and books indexed for 1984.
- Complete coverage of 63 journals in statistics and related fields.
- Statistics articles selected and indexed from over 300 other journals.
- Subject index lists each article alphabetically according to each *important word* in its title.
- Subject index also lists articles alphabetically according to key words not appearing in the title.
- Author index lists each article under the name of each author.
- Reasonable prices:

IMS/ASA Members —\$15 Other individuals —\$20 Other institutions —\$40

Published jointly by the Institute of Mathematical Statistics and the American Statistical Association. Volumes 1-10 are available now at the above prices. Publication of Volume 11 (1985) is expected late in 1986. Orders for Volume 11 are now being accepted at the above prices, with shipping upon availability. Please specify applicable rate and volume number(s) desired. Order prepaid from one of the following sources.

IMS Business Office 3401 Investment Blvd. #7 Hayward, CA 94545 (USA) American Statistical Association 806 15th Street NW Washington, DC 20005 (USA)