# Probability Theory and Related Fields Continuation of

Zeitschrift für Wahrscheinlichkeitstheorie

#### Volume 74 Number 1 1987

- 1 R. D. DeBlassie: Exit Times from Cones in IR" of Brownian Motion
- 31 A. Antoniadis, R. Carmona: Eigenfunction Expansions for Infinite Dimensional Ornstein-Uhlenbeck Processes
- 55 A.F. Karr: Estimation of Palm Measures of Stationary Point Processes
- 71 J.E. Yukich: Some Limit Theorems for the Empirical Process Indexed by
- 91 M. Schäl, W. Sudderth: Stationary Policies and Markov Policies in Borel Dynamic Programming
- 113 S.M. Berman: Extreme Sojourns of a Gaussian Process with a Point of Maximum Variance
- 125 T. Eisele, R. Lang: Asymptotics for the Wiener Sausage with Drift
- 141 K. Iwata: An Infinite Dimensional Stochastic Differential Equation with State Space C (IR)

#### Volume 74 Number 2 1987

- 161 M. Nagasawa, H. Tanaka: Diffusion with Interactions and Collisions Between Coloured Particles and the Propagation of Chaos
- 199 M.J. Frank, R.B. Nelsen, B. Schweizer: Best-possible Bounds for the Distribution of a Sum – a Problem of Kolmogorov
- 213 R. Fox, M.S. Taqqu: Central Limit Theorems for Quadratic Forms in Random Variables Having Long-Range Dependence
- 241 T. Mikosch, R. Norvaisa: Strong Laws of Large Numbers for Fields of Banach Space Valued Random Variables
- 255 **H. Berbee:** Convergence Rates in the Strong Law for Bounded Mixing Sequences
- 271 J.R. Norris, L.C.G. Rogers, D. Williams: Self-Avoiding Random Walk: A Brownian Motion Model with Local Time Drift
- 289 R. Léandre: Majoration en temps petit de la densité d'une diffusion dégénérée
- 295 S. Takanobu: On the Existence of Solutions of Stochastic Differential Equations with Singular Drifts
- 317 W. Glänzel, A. Telcs, A. Schubert: Correction to: Characterization by Truncated Moments and Its Application to Pearson-Type Distributions

#### Volume 74 Number 3 1987

- 319 J. Kuelbs, M. Ledoux: Extreme Values and the Law of the Iterated Logarithm
- 341 J. Kuelbs, M. Ledoux: Extreme Values and a Gaussian Central Limit Theorem
- 357 S. Graf: Statistically Self-Similar Fractals
- 393 T. Kolsrud: On the Markov Property for Certain Gaussian Random Fields
- 403 M. Métivier, P. Priouret: Théorèmes de convergence presque sure pour une classe d'algorithmes stochastiques à pas décroissant
- 429 E. Wong, M. Zakai: Multiparameter Martingale Differential Forms
- 455 Y. Saisho: Stochastic Differential Equations for Multi-dimensional Domain with Reflecting Boundary

Covered by Zentralblatt für Mathematik and Current Mathematical Publications

### Series Editor, Shanti S. Gupta

# **Approximate Computation of Expectations** by Charles Stein

One aim of the theory of probability is the effective computation, perhaps only approximate, of probabilities that are given in principle. This volume is concerned with an abstract approach to the approximate computation of probabilities and, more generally, expectations, keeping in mind the interaction of theoretical ideas and concrete problems.

#### **CONTENTS**

Introduction

- I. The basic approach
- II. Continuation of the basic idea
- III. A normal approximation theorem
- IV. The number of ones in a binary expansion of a random integer
- V. Heuristic treatment of large deviations
- VI. Sums of independent random variables with densities
- VII. Counting Latin rectangles
- VIII. Poisson approximations
  - IX. Sums of independent identically distributed random variables
  - X. Another abstract normal approximation theorem
  - XI. Improved results on the number of Latin rectangles
- XII. Random allocations
- XIII. An application to the theory of random graphs
- XIV. A third abstract normal approximation theorem
- XV. Summary Bibliography

List price	\$20.00
IMS member price	\$12.00

Order prepaid from: Institute of Mathematical Statistics 3401 Investment Boulevard, Suite 7 Hayward, California 94545 (USA)

## Series Editor, Shanti S. Gupta

#### Adaptive Statistical Procedures and Related topics edited by John Van Ryzin

This volume comprises the proceedings of the Symposium on Adaptive Statistical Procedures and Related Topics held at Brookhaven National Laboratory in June 1985. The Symposium was held in honor of the 70th birthday of Herbert Robbins, Higgins Professor of Mathematical Statistics, Columbia University, and Senior Mathematician, Brookhaven National Laboratory. (The Symposium was supported by the National Science Foundation, the Army Research Office, the Air Force Office of Scientific Research, and the Department of Energy).

#### **Sequential Analysis**

#### CONTENTS

- On the Passage of a Random Walk from Generalized Balls by S. Csörgö and L. Horváth
- Convergence Rates for Iterative Solutions to Optimal Stopping Problems by D. A. Darling
- Computing Optimal Sequential Allocation Rules in Clinical Trials by M. N. Katehakis and C. Derman
- Sequential Analysis and the Law of the Iterated Algorithm by H. R. Lerche
- Multi-stage Tests of Hypotheses by G. Lorden
- A Multiple Criteria Optimal Selection Problem by S. M. Samuels and B. Chotlos
- On Bayes Tests for  $p \le \frac{1}{2}$  versus  $p > \frac{1}{2}$ : Analytical Approximations by G. Simons and X. Wu
- Sequential Confidence Intervals with Beta Protection in One-Parameter Families by R. A. Wijsman
- Confidence Sets for a Change-Point (Abstract) by D. Siegmund
- Asymptotic Optimality in Sequential Interval Estimation (Abstract) by M. Woodroofe

#### **Empirical Bayes Theory and Methods**

- Empirical Bayes Rules for Selecting Good Binomial Populations by S. S. Gupta and T. Liang
- The Finite State Compound Decision Problem, Equivariance and Restricted Risk Components by D. C. Gilliland and J. F. Hannan
- The Primal State Adaptive Control Chart by B. Hoadley and B. Huston
- Fully Nonparametric Empirical Bayes Estimation Via Projection Pursuit by M. V. Johns
- Empirical Bayes Estimation in Heterogeneous Matched Binary Samples with Systematic Aging Effects by B. Levin
- Empirical Bayes: A Frequency/Bayes Compromise by C. N. Morris
- Adaptive Allocation for Importance Sampling by R. F. Peierls and J. A. Yahav
- Empirical Bayes Procedures with Censored Data by V. Susarla and J. Van Ryzin
- Empirical Bayes Stock Market Portfolios (Abstract) by T. M. Cover and D. H. Gluss

#### **Stochastic Approximation Procedures**

- Stochastic Approximation for Functionals by D. L. Hanson and R. P. Russo
- Constrained Stochastic Approximation Via the Theory of Large Deviations by H. Kushner and P. Dupuis
- Stochastic Approximation and Adaptive Control by T. L. Lai
- Repeated-MLE Procedures for Stochastic Approximation in Quantal Response Problems by T. Sellke
- Maximum Likelihood Recursion and Stochastic Approximation in Sequential Designs by C. F. J. Wu
- Stochastic Approximation Revisited (Abstract) by A. Dvoretzky

#### **Related Topics: Statistics**

- Distribution Optimality and Second-Order Efficiency of Test Procedures by R. R. Bahadur and J. C. Gupta
- On Estimating the Total Probability of the Unobserved Outcomes of an Experiment by P. J. Bickel and J. A. Yahav
- Remarks on the Estimation of Coefficients of a Regression in the Presence of Unknown Explanatory Variables by H. Chernoff
- Estimation of the Median Survival under Random Censorship by J. C. Gardiner, V. Susarla, and J. Van Ryzin
- Maximum Likelihood Estimation in Regression with Uniform Errors by H. Robbins and C-H. Zhang
- Evaluating the Chosen Population: A Bayes and Minimax Approach by H. Sackrowitz and E. Samuel-Cahn

#### **Related Topics: Probability**

- Stochastic Differential Equations for Neuronal Behavior by S. K. Christensen and G. Kallianpur
- Optimization by Simulated Annealing: A Necessary and Sufficient Condition for Convergence by B. Haiek
- Ruelle's Perron-Frobenius Theorem and the Central Limit Theorem for Additive Functionals of One-Dimensional Gibbs States by S. P. Lalley
- Limit Theorems for Random Central Order Statistics by M. L. Puri and S. S. Ralescu
- On Moments of Ladder Height Variables (Abstract) by Y. S. Chow

List price	. <b>\$40</b> .00
IMS member price	. \$24.00

Order prepaid from:

Institute of Mathematical Statistics 3401 Investment Boulevard, Suite 7 Hayward, California 94545 (USA)

# The Annals of Statistics June 1987

Vol. 15

No. 2

Articles	
Maximum likelihood estimation in the multiplicative intensity model via sieves	
Local asymptotics for linear rank statistics with estimated score functions  Georg Neuhaus	
Efficient estimation in the errors in variables model P. J. BICKEL AND Y. RITOV Monte Carlo evidence on adaptive maximum likelihood estimation of a regression DAVID A. HSIEH AND CHARLES F. MANSKI	
Estimating trajectories	
A new approach to least-squares estimation, with applicationsSARA VAN DE GEER A class of linear regression parameter estimators constructed by nonparametric estimationJ. A. CRISTÓBAL CRISTÓBAL, P. FARALDO ROCA AND	
W. GONZÁLEZ MANTEIGA	
Estimation of heteroscedasticity in regression analysis HANS-GEORG MÜLLER AND ULRICH STADTMÜLLER	
One-step L-estimators for the linear model	
for regression	
M-estimation for discrete data: Asymptotic distribution theory and implications DOUGLAS G. SIMPSON, RAYMOND J. CARROLL AND DAVID RUPPERT	
The robustness and sensitivity of the mixed-Dirichlet Bayesian test	
for "independence" in contingency tables I. J. GOOD AND J. F. CROOK. The amalgamation and geometry of two-by-two contingency tables	
I. J. GOOD AND Y. MITTAL An optimization problem with applications to optimal design theory . CHING-SHUI CHENG Bootstrap of the mean in the infinite variance case	
in distribution	
A complete class theorem for estimating a noncentrality parameter Mo Suk Chow Unbiasedness of tests for homogeneity ARTHUR COHEN AND HAROLD B. SACKROWITZ Sequential shrinkage estimation	
MALAY GHOSH, DAVID M. NICKERSON AND PRANAB K. SEN A nonlinear, nontransitive and additive-probability model for decisions	
under uncertainty	
Short Communications	
Monotone empirical Bayes test for uniform distributions using the maximum likelihood estimator of a decreasing density J. C. VAN HOUWELINGEN On a conjecture of Huber concerning the convergence of projection pursuit regression	
Corrections	
Estimating a distribution function with truncated data	

# STATISTICAL SCIENCE

a review journal of the institute of mathematical statistics

EXECUTIVE EDITOR: Morris H. DeGroot, Carnegie-Mellon University EDITORS: David R. Brillinger, University of California, Berkeley J. A. Hartigan, Yale University Ingram Olkin, Stanford University

IMS continues publication of Statistical Science, its successful quarterly review journal in statistics and probability, in 1987. Statistical Science presents the full range of contemporary statistical thought at a modest technical level accessible to the broad community of practitioners, teachers, researchers, and students in statistics and probability. Statistical Science has been enthusiastically received by the statistical and probabilistic community.

- "...a joy to read...clear and insightful."
  - Peter Enis, Buffalo
- "...most refreshing...I enjoyed page after page."
  - Frederick Mosteller, Harvard
- "...very attractive...extremely interesting."
  - Peter Armitage, Oxford
- "Statistical Science is a gem." Jonas H. Ellenberg, National Institutes of Health
- "... read from cover to cover, and I enjoyed every bit of it." Robert F. Ling, Clemson
- "...beautiful...an attractive and exciting product." Judith Tanur, Stony Brook
- "...a welcome draught of fresh air."
  - Samuel Kotz, Maryland
- "...a great success."
- I. Richard Savage, Yale
- "...marvelous...a wonderful service!"
  - Michael D. Perlman, Washington
- "...an enormous delight!"
- Edward R. Tufte. Yale

# Featuring in Volume 1 (1986)

Articles by Freedman & Navidi on "Models for Adjusting the Census"; Efron & Tibshirani on "The Bootstrap"; Le Cam on "The Central Limit Theorem Around 1935"; Geisser on "The Collected Works of George E. P. Box"; Genest & Zidek on "Combining Probability Distributions"; Good on "Statistical Applications of Poisson's Work"; Bookstein on "Morphometrics"; Thisted on "Computing Environments"; Lai & Siegmund on "The Contributions of Herbert Robbins"; Hastie & Tibshirani on "Generalized Additive Models"; Fishburn on "The Axioms of Subjective Probability"; Stigler on "Laplace's Memoir on Inverse Probability"; Chatterjee & Hadi on "Influential Observations"; Shafer on "Savage Revisited"; Wegman on "Harald Cramér's Personal Recollections"; O'Sullivan on "Ill-Posed Inverse Problems". Conversations with T. W. Anderson, D. Blackwell, P. Diaconis, E. L. Lehmann, and C. Stein.

Statistical Science is included as a privilege of membership in the Institute (\$30 for individuals). Nonmember subscriptions are available to individuals (\$25) and organizations (\$40). All subscriptions to The Annals of Statistics and The Annals of Probability include a subscription to Statistical Science in 1987. For additional information on how to receive Statistical Science, please write to the IMS Business Office, 3401 Investment Boulevard #7, Hayward, California 94545 (USA).