

May 1988

## Call for Papers

The 1989 Special Issue on Environmental Statistics

Environmental statistics is a recent and growing branch of official statistics, stemming from the substantial changes in the environment due to pollution, acidification, etc. Describing and analyzing the state of the environment, with its complex biological systems, present new challenges for statistical methodology. In this special issue, we are interested in a broad range of methodology and applications, and in the policy issues of environmental statistics. The following are examples of suitable topic areas.

- 1. Sampling the environment, e.g., definition of population and frame, random and nonrandom samples.
- 2. Data collection and data sources, e.g., methods of measurement, remote sensing, etc.
- 3. Generalization from point measurements, e.g., Kriging, etc.
- 4. Analysis of environmental data, e.g., analysis of relations between variables, other multivariate methods, time series analysis, and nonrandom data.
- 5. Choice of variables, indicators, indices, e.g., comparability and classification. Planning for future data needs.
- 6. Harmonizing data of different character and quality, e.g., data obtained by different methods over time, hard and soft data, and case studies.
- 7. Presentation: choice of topics, forms (maps, tables), and regions (administrative, drainage areas), etc.
- 8. Use of official environmental statistics, e.g., instrumental use by government and local authorities, in research, or general information.
- 9. Evaluation of the environment in monetary terms, e.g., benefit-cost analysis.
- 10. Statistics, law, and environment.
- 11. International environmental issues, cooperation, etc.

Manuscripts for the special issue should be sent in five copies to the Chief Editor, Lars Lyberg, preferably before November 30, 1988.

The Journal of Official Statistics is a refereed scholarly journal published quarterly. All inquiries should be directed to the Chief Editor at the address below.

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

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by Persi Diaconis

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Examples; The basic setup; Some explicit computations; Random transpositions; The Markov chain connection; Random walks on homogeneous spaces and Gelfand pairs; Some references; First hitting times

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