
Contents:
1. Nature of problem
2. "SWOT" analysis for statistics
3. Elements of the statistical system – The stakeholders and interactions
4. A case study: Health care statistics
5. Fundamentals - national income accounting
6. Global interaction
7. Recommendations. National accounts and the SNA
9. Concluding remarks
APPENDIX: Guidelines for bibliography development

Readership: Those involved, or at least interested, in statistics for decision-making at national supra-national level, or at the level of commercial and other organizations

This is a historical detective story about the existence and veracity of Ptolemy; either he was ancient and a cheat, or medieval and an imposter. The authors search for patterns to explain anomalies in a purportedly 1800 year old star catalogue, by a lot of data mining and data rejection followed by least-squares fitting; it seemed to me a pity that robust methods were not used to derive less subjective and more powerful conclusions. The authors settle for the imposter hypothesis, but it only emerges in the addendum that this was developed 60 years ago by Morozov.

The reader will have to do some detective work too; several crucial numerical quantities are mis-printed, and the tables have no titles nor explanatory captions although the figures have very clear captions. There should be some good student projects in this material.

University of Oxford
Oxford, U.K. B.D. Ripley


Contents:
1. Some concepts of astronomy and history of astronomy
2. Star catalogue of the Almagest. Preliminary analysis
3. The attempts to date the Almagest with the help of the simplest procedures, and why they fail
4. Who is who?
5. Analysis of systematic errors in stellar configurations
6. Statistical properties and the accuracy of the catalogue of the Almagest
7. Dating the star catalogue of the Almagest
8. Inclination of the ecliptic in the Almagest
9. Dating other medieval catalogues
10. A date for the Almagest for coverings of stars and lunar eclipses.

Addendum: Problems and hypotheses connected with dating the Almagest

Readership: Readers of detective stories

This is a historical detective story about the existence and veracity of Ptolemy; either he was ancient and a cheat, or medieval and an imposter. The authors search for patterns to explain anomalies in a purportedly 1800 year old star catalogue, by a lot of data mining and data rejection followed by least-squares fitting; it seemed to me a pity that robust methods were not used to derive less subjective and more powerful conclusions. The authors settle for the imposter hypothesis, but it only emerges in the addendum that this was developed 60 years ago by Morozov.

The reader will have to do some detective work too; several crucial numerical quantities are mis-printed, and the tables have no titles nor explanatory captions although the figures have very clear captions. There should be some good student projects in this material.

University of Oxford
Oxford, U.K. B.D. Ripley


Contents:
1. Introduction and background to human reliability analysis
2. Conducting human reliability analysis
3. Formal methods for estimating human reliability
4. HRA fault and event trees
5. Existing data sources and data bank
6. HRA: A case study for nuclear processing facility design
7. HRA case study for a nuclear power plant; containment venting procedure
8. Relation of HRA to system safety and system performance
9. Simulators and simulation as a tool for evaluating human reliability
10. Organisational factors and human reliability
11. Outstanding issues
12. Behavioral mechanisms underlying human error
13. The problem: Representation of errors of commission (cognitive error) in PRA
14. HRA and the impact of emerging hardware and software
technologies
Readership: Engineers, risk analysts, reliability analysts, particularly in the nuclear, process control and transportation industries

The book presents a summary of current methods, techniques, data and concepts in Human Reliability Assessment (HRA). It argues for a systematic and quasi-tilable approach to human error. This will enable a range of improvements to complex man-machine systems which in turn will reduce risk. The authors specifically recognize both cognitive and organizational factors as contributing to risk and note that, unlike mechanical failure which is all-at-once, human performance may degrade slowly over time. This is a highly specialized book, really suited only to its intended audience. For which, it provides a far-ranging overview of the topic and a rich source of references.

University of Bath
Bath, U.K.
B. Farbey


Contents:
1. Bivariate linear regression
2. Multiple regression
3. Multiple classification analysis
4. Path analysis
5. Logit regression
6. Multinomial logit regression
7. Survival models, Part 1: Life tables
8. Survival models, Part 2: Proportional hazard models
9. Survival models, Part 3: Hazard models with time dependence

Readership: Social science and biomedical professionals, graduate or advanced undergraduate students

This book presents a useful compendium of causal analysis techniques. Written in a clear, crisp style, it covers the field briskly, assuming a basic knowledge of statistics and trimming some of the back-ground which would require complicated mathematical argument, for example the derivation of sampling distributions and standard errors. By being very focused and precise, the authors manage to convey a great deal about causal models and the process of model building. Practitioners will find the exposition of underlying assumptions, and the effects of violating them, particularly helpful. Although it can be used on its own, this book comes into its own as a supplementary or reference text. It is well illustrated with examples drawn from an actual study, giving it an unusually consistent feel. There are sample computer programs too, for those with access to BMDP, LIMDEP and SAS.

University of Bath
Bath, U.K.
B. Farbey


Contents:
1. Welcoming problems
2. Basic probability theory I
3. Basic probability theory II
4. Topics from early days I
5. Topics from early days II
6. Random permutations
7. Miscellaneous I
8. Poisson approximation
9. Miscellaneous II
10. Random walks
11. Urn models
12. Cover times
13. Markov chains
14. Patterns
15. Embedding procedures
16. Special topics
17. Farewell problems

Readership: Students, teachers and researchers in probability

The authors state that "from the collection of 125 examples, the 'problems' are selected on the basis of their elegance and utility whereas the 'snap-shots' are intended to provide a quick overview of topics in probability." One of the pleasures in teaching a course on probability lies in discussing examples coming from diverse aspects of life. Such ex-amples can be motivated by their intrinsic scientific interest, historical relevance or sheer beauty. All of these motivations are omni-present throughout the set of examples. It is obvious that the authors have had fun in writing this book; they want to share their enthusiasm for the subject with a broad readership. An important bonus is that all problems come from discrete probability so that only minimal prerequisites are needed. In the good old tradition of Feller, Volume 1, it is indeed remarkable how many interesting excursions one can make in this discrete probabilistic world. Most of the chapters contain intellectual transitions from elementary calculations to taxing combinatorial argu-
ments. The authors are to be congratulated on the final product. I am definitely looking forward to spending time browsing through the book when occupying an easy-chair.

ETH-Zentrum
Zürich, Switzerland
P.A.L. Embrechts


Contents:
1. Introduction
2. How to use the disk
3. The data sets
4. Data structure index

Readership: Teachers of data analysis and statistics, statisticians

There are five hundred and ten real, small sets of data listed in the text, "real" meaning generated by observation or measurement, not invented; "small" meaning 0.81 per page, sorted conveniently in ASCII code on the accompanying DOS disk, described briefly, a dozen or so lines giving study context, source, sometimes the question(s) raised, and occasion-ally the original source, a problematic analysis, or a reference to a published analysis, and indexed by the title giving data structure, and by subject-matter con-text. The data structure code is initially cryptic but, one suspects, ultimately quite useful; it gives the number of independent units measured, the number of variables, roughly speaking, a classification of type of data and the filename on the disk. A scan of the titles in the data structure index or the keywords in the subject index is a visit to an exotic bazaar laden with fascinating trinkets from the storehouse of human curiosity and ingenuity. I cannot wait to use this book in my teaching.

Queen's University
Kingston, Canada
J.T. Smith

Contents:
PART I : Basic Principles
1. Introduction
2. Why do outlying observations arise and what should one do about them?
3. The accommodation approach: Robust estimation and testing
4. Testing for discordancy: Principles and criteria

PART II : Univariate Data
5. Accommodation procedures for univariate samples
6. Specific discordancy test for outliers in univariate samples

PART III: Multivariate and Structured Data
7. Outliers in multivariate data
8. The outlier problem for structured data: Regression, the linear model and designed experiments

PART IV : Special Topics
9. Bayesian approaches to outliers
10. Outliers in time series: An important area of outlier study
11. Outliers in directional data
12. Some little-explored areas: Contingency tables and sample surveys
13. Important strands: Computer software, data studies, standards and regulations
14. Perspective

Readership: Experimental scientists, statisticians

The author aims to calm the fears of biology students about statistics and to inspire in them a sense of the importance of statistical ideas. Unfortunately, like many similar books, this one is unsatisfactory. There are the all-too-common technical errors: a plot of the normal density appears to go to zero at the origin, for example, and the interpretation of confidence intervals is at best unclear and sometimes in-correct. The choice of topics is unusual: there is a strong emphasis on experimental design, reflecting the author's background in agriculture, but, surprisingly, no mention of either binomial or Poisson distributions and very little exploratory data analysis. Use of the F distribution in analysis of variance is advocated with no discussion of the required assumptions, although the assumptions underlying normal-theory in-ference in linear regression are discussed. Ultimately, I believe, the author aims for too much: the difficult concepts of classical frequentist inference cannot readily be taught at this level. An introductory text should more usefully occupy itself giving a firmer grasp of important elementary ideas.

Queen Mary and Westfield College
London, U.K.
D.J. Balding


Contents:
1. Preliminaries
2. Probability
3. Random variables
4. Expectations
5. Limit theorems
6. Some parametric families
7. Sampling and reduction of data
8. Estimation
9. Testing hypotheses
10. Analysis of categorical data
11. Sequential analysis
12. Multivariate distributions
13. Nonparametric tests
14. Linear models and analysis of variance
15. Decision theory

Readership: Undergraduates majoring in statistics

In the early 1960's there appeared several books on statistical theory, targeted at the more serious end of the undergraduate market, which have become standard texts for the subject. They have maintained their dominance via successive editions which ensure that emphasis, layout, style and quantity of examples reflects contemporary fashion. This new edition of Lindgren's book is a case in point. The first edition appeared when measure theory was in its ascendancy in departments of statistics and the in-fluence of this theory has been apparent, albeit in a rather dilute form, in all successive editions. How-ever, the present edition appears to have been forged on the anvil of experience. Because of the weak mathe-matical background of many who major in statistics, any
discussion of the foundations of probability and set theory proves indigestible and in any case is not es-sential to a reasonable grasp of undergraduate stati-stical theory. Thus the section dealing with the foun-dations has been purged of such material and made more accessible to current students. Another advance has been that more examples have been included; an increase of over forty or fifty percent depending on whether you believe the preface or the jacket. This is welcome as earlier editions had been a little light on examples.

A feature of such texts in the 1960’s was that important or useful results were often buried in a body of text. This contrasts with the current trend of box-ing or high-lighting by shading and indenting every-thing in sight. The new edition has made some gesture in this direction by elevating useful results to the status of theorems. The overall content, whilst being extensively redrafted, has not changed in substance very much although there has been some re-ordering of the topics. Solutions to most examples are provided. The net effect of all this is to make the book more user-friendly. This edition should allow the text to continue to have currency in the undergraduate market and to maintain its status as one of the standards.

Macquarie University Sydney, Australia J.R. Leslie

ELEMENTARY PROBABILITY. D. Stirzaker. Cambridge University Press, 1994, pp. x + 406, £45.00/US$64.95 Cloth: £15.95/US$24.94 Paper.

Contents:
1. Probability
2. Conditional probability and independence
3. Counting
4. Random variables: Distribution and expectation
5. Random vectors: Independence and dependence
6. Generating functions and their applications
7. Continuous random variables
8. Jointly continuous random variables
9. Markov chains

Readership: Those looking for a first introduction in probabilistic thinking

Excellent! A vast number of well-chosen worked examples and exercises guide the reader through the basic theory of probability at the elementary level. The author must have worked very hard to bring together so many good and useful problems and examples. This undoubtedly makes the book stand out from the multitude of texts now available on the subject. A novelty at this level is definitely the chapter on Markov chains, sixty pages. In order to keep to the elementary mathematical level, the author introduces the rather un-usual notion of regularity, which ensures that a cer-tain power of the transition matrix has no zero en-tries. This makes possible the proof of the theorem at this elementary level. All in all, this is an excellent text which I am sure will give a lot of pleasure to students and teachers alike.

ETH-Zürich Zürich, Switzerland P.A.L. Embrechts

PROBABILITY. J. Pitman. New York: Springer-Verlag, 1993, pp. xi + 559, DM.88.00/ÖS.686.40/Sw.fr.88.00/US$49.00.

Contents:
1. Introduction
2. Repeated trials and sampling
3. Random variables

Readership: Beginning graduate students in statistics and mathematics

This book attempts to answer the question: "How much of the mathematical foundations of proba-bility should a graduate student of statistics know?". To quote from the preface: "The major issue in writing a book on probability at this level is what to do about measure theory". The approach here is to use some con-cepts and results from measure theory, but avoid a gen-eral development. The selection of material is tra-dit-ional; Chapters 1 to 7 work towards a climax at the three great classical limit theorems, while Chapters 8 and 9 introduce conditional expectation, in terms of minimum mean-squared error of prediction and martin-gales. The development is reasonably formal and rigor-ous, with many proofs worked in full, although results are usually not given in their most general form. Applications to, for example, stochastic integration and maximum-likelihood estimation, are briefly intro-duced, but Karr regrets that space restrictions did not allow a full discussion of applications.

Queen Mary and Westfield College London, U.K. D.J. Balding
Contents:
PART I: Probability Models and Likelihood
1. Probability models
2. Conditional probability models
3. Likelihood
4. Consecutive follow-up intervals
5. Rates
6. Time
7. Competing risks and selection
8. The Gaussian probability model
9. Approximate likelihoods
10. Likelihood, probability and confidence
11. Null hypothesis and p-values
12. Small studies
13. Likelihoods for the rate ratio
14. Confounding and standardization
15. Comparison of rates within strata
16. Case-control studies
17. Likelihoods for the odds ratio
18. Comparison of odds within strata
19. Individually matched case-control studies
20. Tests for trend
21. The size of investigations

PART II: Regression Models
22. Introduction to regression models
23. Poisson and logistic regression
24. Testing hypotheses
25. Models for dose-response
26. More about interaction
27. Choice and interpretation of models
28. Additivity and synergism
29. Conditional logistic regression
30. Cox's regression analysis
31. Time-varying explanatory variables
32. Three examples
33. Nested case-control studies
34. Gaussian regression models
35. Postscript

Readership: Students of epidemiology, clinical epidemiology or biostatistics

Statistics as practiced by epidemiologists is somewhat specialized. Often the epidemiologists learn statistics through the classical development of the normal theory model with extensions of the methods to epidemiologic problems. This book reverses this order and hence will appeal to specialists in epidemiology. Understanding of the material will be enhanced by prior exposure to statistical methods, but extensive mathematical preparation is not required. The book will work best as a text for an instructed course or for self-teaching. It is readable and contains many, solved, exercises for practice.

Queen's University
Kingston, Canada

J.D. Myles

MODELLING SURVIVAL DATA IN MEDICAL RESEARCH

Contents:
1. Survival analysis
2. Some non-parametric procedures
3. Modelling survival data
4. The Weibull model for survival data
5. Model checking in the proportional hazards model
6. Some other parametric models for survival data
7. Time-dependent variables
8. Interval-censored survival data
9. Sample size requirements for a survival study
10. Some additional topics
11. Computer software for survival data
12. Time-dependent variables
13. Interval-censored survival data
14. Sample size requirements for a survival study
15. Some additional topics
16. Computer software for survival analysis

Readership: Statisticians, numerate scientists and clinicians, undergraduate students

Anyone wanting an easy introduction to performing a survival analysis should buy this book. The author gives an outstanding lucid account of both the parametric and non-parametric approaches to survival analysis.

The first five chapters are devoted to Cox's proportional hazards model, and models based on the Weibull distribution. All aspects of modelling, from model definition and selection to residual analysis, are discussed. Sufficient mathematical detail is given for the motivation behind the techniques to be grasped and references are given for further reading.

As each concept is introduced, the author gives an example that illustrates it precisely. Thirteen sets of data are analyzed, some of them by several methods, which allow the methods to be compared and contrasted. A particularly attractive feature is the detailed interpretation of the results of each of the analyses.

In the next chapters, other survival models are discussed: accelerated failure-time models, models with time-dependent covariates, non-proportional hazards, multi-state models and models for interval-censored-survival data. The chapter on sample size requirements and the references therein will be useful to those planning a survival study. The final chapter compares the various computer programs available for survival analysis.

This book complements Cox, D.R. and Oakes, D. (1984) Analysis of Survival Data. [Short Book Reviews, Vol. 4, p.35] and, of course, incorporates many of the developments that have occurred over the last ten years. Although the title suggests that it is intended for medical applications, it will be useful to practit-ioneers in any field. It would be a suitable textbook for an undergraduate course in survival analysis. It should do much to encourage use of these powerful tech-niques in other areas. The book is highly recommended.

University of Cape Town
Cape Town, South Africa

J.M. Juritz

MODELS FOR REPEATED MEASUREMENTS
J.K. Lindsey.
7. Frailty
8. Event histories

Readership: Research statisticians in agriculture, medicine, economics and psychology, and consulting statisticians

After a brief introductory chapter the book gives a sixty-six page outline of statistical modelling in general, before focusing on the particular problems of repeated measurements. An attractive feature is the book's wide scope; it includes discussions of categori-cal data as well as normal distribution models and dur-ation data. It has many real examples, with complete listings of the data. The list of 1382 references has an associated key classifying the contents of each article according to twenty-one categories, which makes the book a valuable resource for anyone who is thinking of under-taking research in this area.

The author describes his intent as being "to provide methods and examples which may form a basis from which a research worker can proceed", and says that the book is aimed primarily at applied statis-ticians, but it is also suitable as a graduate text. I think that the author has hit his target. Given the wide range of topics covered, the author necessarily had to omit or skip a number of areas. These include inference, for which he relies on deviances or likeli-hood ratios, extensions to multivariate responses, and design of repeated measurements studies. Whether one thinks that some of these should be included at the expense of the topics he has covered is a matter of taste. My own view is that this volume is a valuable contribution to the literature on repeated measure-ments.

The Open University
Milton Keynes, U.K.


Contents:
1. Clustered observations
2. Analysis of covariance with random effects
3. Examples. Random effects models
4. Random regression coefficients
5. Examples using random regression coefficient models
6. Multiple levels of nesting
7. Factor analysis and structural equations
8. GLM with random coefficients

Readership: Statisticians and researchers who have to handle clustered observations, predominantly, but not solely, from the social sciences

I would describe this as an applied statistics book: it illustrates the ideas through many real exam-ples but does not shy away from the necessary mathe-matics. The examples bring home the importance and appropriateness of random coefficient models and are highly convincing for the author's goal of rehabili-tating variation as an entity of substantive interest in the social sciences. In particular, the book has three aims: to describe methods for analyzing clustered observations, to provide examples where between cluster variation is of substantive interest, and to provide a balanced presentation of the advantages and limit-ations of these methods. It seems to me to be successful in achieving these aims.

A basic knowledge of linear algebra and stat-istics, including maximum likelihood estimation and the multivariate normal distribution, is assumed. Most of the chapters conclude with a bibliographical notes sec-tion which provide good entry points to the litera-ture. I did not spot many errors, though "accommodate" is consistently misspelt in the preface and elsewhere.

The Open University
Milton Keynes, U.K.


Contents:
1. Introduction to the number-theoretic method
2. Numerical evaluation of multiple integrals in statistics
3. Optimisation and its application in statistics
4. Representative points of a multivariate distribution
5. Experimental design and design of computer experiments
6. Some applications in statistical inference

Readership: Statisticians, number theorists, numerical analysts

This intriguing text is a rigorous mathe-matical development of results using number-theoretic methods for numerical integration, optimization and statistical simulation, developed over many years by the authors. The method finds a set of points, called an NT-net, which achieves uniform scatter over a multi-dimensional unit cube, in the sense of having small discrepancy, a measure defined by the authors. Use of good-lattice-point sets is shown to produce much smaller errors in numerical integration than use of either equi-lattice points or Monte-Carlo simulation. The method is illustrated using various multivariate moment and probability integrations. A sequential al-gorithm involving iteratively-generated NT-nets, de-fined over changing domains, is introduced to solve optimization problems including estimation with maxi-mum likelihood and non-linear regression. The experi-mental design chapter considers the use of good-lattice-point sets to determine uniform designs in which the number of design points is very small com-pared with the number of factor level combinations. Models including interaction terms are fitted using stepwise regression since, for these designs, there may be fewer observations than model parameters. The chapter includes a useful up-to-date section on designs for computer experiments. The final chapter deals with robust multivariate estimation and tests for multi-normality and sphericity. Exercises are given at the end of each chapter. The book offers an interesting opportunity to learn about a particular optimization method applied to a range of statistical problems.

University of Southampton
S.M. Lewis and
Southampton, U.K.
P. Prescott


Contents:
Overview
1. Prelude: The ideas of covariance and of covariance structure
2. Writing a simple EQS program: Learning the language
3. Statistical modelling in EQS
4. Confirmatory factor analysis models
5. Multitrait-multimethod and multiple indicator multiple cause models
6. Models for longitudinal data
7. Simultaneous analysis for two or more groups
8. Common practical problems

Readership: Econometricians, psychologists, statisticians
This book is well planned and well written. It will be essential reading for EQS users. All the models discussed share a latent variable structure illustrated by a path diagram, for example, confirmatory factor analysis. EQS is a program for fitting these models, marketed by BMDP since 1992. The program is described in this book, and throughout there are displays giving EQS codes and results. A strength of the book is its discussion of thorny problems, for example, hitting parameter boundaries, under-identified models. Presenting formulae for expressions like Var(X+Y), the authors write: "We ... are content to let the reader use them as given." This category of reader will be thrown by a notational error in Display 1.12, which sets up a path diagram for a factor analysis model. Such readers are likely to find the more complex models of this book hard to fit and understand without expert help. It is to be hoped that this book will encourage non-statisticians to seek statistical advice.

University of Kent
Canterbury, U.K.          B.J.T. Morgan

PREDICTIVE INFERENCE: AN INTRODUCTION, S. Geisser.
New York: Chapman and Hall, 1993, pp. xii + 264, US$49.95/£35.00.

Contents:
1. Introduction
2. Non-Bayesian predictive approaches
3. Bayesian prediction
4. Selecting a statistical model and predicting
5. Problems of comparison and allocation
6. Perturbation analysis
7. Process control and optimization
8. Screening tests for detecting a characteristic
9. Interim analysis and sampling curtailment

Readership: Statisticians, students and researchers in science and technology

This is an excellent introduction to statistic-ical prediction written by one of the leading proponents of the predictive approach to statistics. The text is clearly and succinctly written and covers pre-diction from many perspectives including the Bayesian, likelihood, and cross-validated or sample reuse ap-proaches. It is currently the most complete and useful introductory survey of predictive methodology and pro-vides a good starting point for anyone interested in learning or using predictive methods. I recommend it wholeheartedly.

Colorado State University
 Ft. Collins, U.S.A.        R.W. Butler

COMPUTER INTENSIVE STATISTICAL METHODS, Validation, Model Selection and Bootstrap. J.S. Urban Hjorth.

Contents:
1. Prelude
2. Computer-intensive philosophy
3. Cross validation
4. Validation of time series problems
5. Statistical bootstrap
6. Further bootstrap results
7. Computer-intensive applications

Readership: Statisticians, scientific researchers using statistical methods

It may seem somewhat surprising that Chapman and Hall have chosen to publish this book so soon after B. Efron and R.J. Tibshirani's comprehensive monograph An Introduction to the Bootstrap [Short Book Reviews, Vol. 14, p.4]. A substantial proportion of Hjorth's work, especially the descriptive material on the bootstrap in Chapters 5 and 6, covers material considered in greater depth by Efron and Tibshirani, and the mathematical level is not very different. But this book leans heavily towards applications. It gives both a clear introductory discussion of the computer-intensive philosophy and a number of interesting examples relating to problems in different fields, including meteorology, economics and road safety analysis. These will provide useful insights of computer-intensive methodology and the bootstrap for non-statisticians. The book is written in an engaging, entertaining style and is well worth a look, though the statistician wishing to learn in a structural way about computer-intensive methods for statistical inference will prefer the book of Efron and Tibshirani.

University of Kent
Canterbury, U.K.          G.A. Young

MEASUREMENT, REGRESSION AND CALIBRATION, P.J. Brown.

Contents:
1. Introduction
2. Simple linear regression
3. Multiple regression and calibration
4. Regularized multiple regression
5. Multivariate calibration
6. Regression on curves
7. Non-linearity and selection
8. Pattern recognition

Readership: Research scientists, statisticians

The author states that "this book has been designed primarily as a research monograph for a range of regression problems...". This is an advanced text on regression, with an emphasis upon calibration. Readers will need a good knowledge of regression at say the level of G.A.F. Seber's Linear Regression Analysis to take advantage of this book. Some of the topics covered include profile likelihood, ridge regression, partial least squares, Bayesian prediction and calibration, and pattern recognition.

As calibration is a major theme of this text, I was disappointed with the way in which calibration was introduced in Chapter 2. The author seems to be in too much of a hurry to get to the more advanced mathe-matics. The distinction between the two cases, which he calls natural or random calibration and controlled calibration, should have been treated at much greater length. At least one real example should have been included.

The title of Chapter 7 suggests that it is on non-linear regression and variable selection in multiple regression. In fact it is on the problem of prediction from spectra, such as near infra-red spectra. This chapter is one of the easier ones to read; it is well illustrated and should be useful to workers in this area.

Subjects which are not covered, or which receive only very limited comment, include 'errors in variables' which is relevant to the problem of calibrating several instruments which are supposed to be measuring the same quantity, the use of splines, and non-linear regression.

CSIRO
Melbourne, Australia           A.J. Miller
**MODEL-FREE CURVE ESTIMATION**. M.E. Tarter and M.D. Lock.
New York: Chapman and Hall, 1993, pp. x + 290, £29.95.

Contents:
1. Introduction to curve estimation
2. Generalized representation
3. Series and kernel-based density estimation
4. Optimizing density estimates
5. Mixture decomposition applications
6. Curve estimation approaches to model and transformation selection
7. Threshold parameter and transformation applications
8. Applications of likelihood multipliers
9. Survival curve and bivariate estimation applications
10. Nonparametric curve estimation and inference

Readership: Statisticians, applied statisticians, research students

This book claims to be very general in its approach to curve estimation. Although it is clearly written from the perspective of using Fourier series estimators, the authors do show that the penalized likelihood and kernel methods can also be expressed in this manner. The introduction outlines the philosophical approach from a number of perspectives, and throughout the text, wide use is made of real and simulated data; many figures illustrate the examples. It begins on an easy level, giving a mostly historical perspective, with references to more specialized books. However, later chapters become deeper and more technical.

Much of curve estimation is used as an exploratory tool for the purposes of transforming the data and/or for subsequent inference. The authors describe graphical tools, such as the use of the generalized failure-rate function, to explore transformation selection. This book does a great deal to explore and develop the interface between the model-free, nonparametric approach and maximum-likelihood methods as well as some Bayesian inference.

University of Leeds
Leeds, U.K.

C.C. Taylor

**INFERENCE AND ASYMPTOTICS**. O.E. Barndorff-Nielsen and D.R. Cox.

Contents:
1. Preliminaries
2. Same general concepts
3. First-order theory
4. Higher-order theory: Preliminaries and motivation
5. Some tools of higher-order theory
6. Higher-order theory: Likelihood combinatorics
7. Higher-order theory: Some further results and tools
8. Various notions of pseudo-likelihood and higher-order theory
9. Further aspects

Readership: Theoretical and applied statisticians with some background in elementary asymptotic theory

This is the inferential counterpart to the authors earlier probabilistic (1989) *Asymptotic Techniques for Use in Statistics* [Short Book Reviews, Vol. 9, p.25]. It deals with procedures based on various types of likelihood (directed, partial, penalized, profile, pseudo, quasi,...) and, after some introductory chapters, is mainly concerned with higher-order asymptotics both to obtain better approximations and in order to discuss the relative merits of pro-ecedures that are equivalent up to first order. As the author's state, the book "exemplifies concepts and techniques rather than precise mathemati-cal verifications with full attention to regularity conditions". They also point out that much of the field is "undergoing rapid further development" and the account of these parts therefore "has more the flavour of a progress report than an exposition of a largely completed theory".

This report is focused on parametric like-lihood theory and thus excludes, for example, asymptotic considerations of nonparametric and semi-parametric models, and of robustness.

The book succeeds in bringing together a large amount of useful and interesting work, much of it re-cent and due to the authors themselves. There are close to seventy references to papers by one or both of the authors, most of it done during the last fifteen years.

University of California
Berkeley, U.S.A.

E.L. Lehmann


Contents:
1. Introduction
2. Asymptotic inference for (finite-dimensional) parametric models
3. Information bounds for Euclidean parameters in infinite-dimensional models
4. Euclidean parameters: Further examples
5. Information bounds for infinite-dimensional parameters
6. Infinite-dimensional parameters: Further examples
7. Construction of estimates

Readership: Mathematical statisticians

Many of us knew that this book was on its way and finally it is here: a four-author monograph of more than five hundred pages on the theory of estimation in semi-parametric models. The project started some ten years ago with lectures given by two of the authors (P.J. Bickel and J.A. Wellner) at Johns Hopkins University, Baltimore. The book is on estimation theory based on an independent and identically distributed sample from a probability distribution P, which is thought to belong to a semi-parametric model. That is a collection of distributions which is intermediate between the set of all probability distributions and a usual parametric model. A typical example of a semi-parametric model is a subset which is parameterized by (0,g), where 0 is a Euclidean parameter and g is an element in some function space.

It is nice that the book starts by reviewing estimation theory for parametric models: lower bound theory, geometric results, etc. The next two chapters discuss information bounds for Euclidean parameters in semi-parametric models. This is illustrated by a broad range of examples, including group models, regression models, biased sampling models, mixture models, mis-sing-data models and transformation models. The theory and methods are extended in the next two chapters to the infinite-dimensional parameters in the model. The final chapter discusses efficiency and other properties.

Readers will certainly be very grateful to the authors for adding a very useful Appendix, of more than 100 pages, with basic definitions and interesting facts from functional analysis, weak convergence theory, etc. Also the very valuable list of more than five hundred references to the literature will be appreciated.

The authors have collected the basic ideas of many famous statisticians of the past and present and successfully brought them together with their own major contributions to the theory. The examples and applications are very valuable. All this makes "the green book" into a most interesting work for the specialist in the field and for those who...
CASE STUDIES IN TIME SERIES ANALYSIS. Z. Xie.

Contents:
1. Theory of stationary time series
2. ARMA model and model fitting
3. Prediction, filtering and spectral analysis of time series
CASE I : Digital processing of a dynamic marine gravity meter
CASE II : Digital filters design by maximum entropy modelling
CASE III : The spectral analysis of the visual evoked potentials of normal and congenital dull children (Down's disease)
CASE IV : Statistical analysis of VEP and AI by the principal component analysis of time series in frequency domain
CASE V : Periodicity analysis of LH release in isolated pituitary gland by hidden frequency analysis
CASE VI : Statistical detection of Uranian ring signals from the light curve of photoelectric observation
CASE VII : On the forecasting of freight transportation by a new model fitting procedure of time series
CASE VIII: The water flow prediction in Ziang river
CASE IX : Miscellaneous case study

Readership: Undergraduates and postgraduates in time series analysis, applied statisticians, scientists and engineers

The history of time series analysis shows that the subject derives great strength from interacting with other branches of science and technology. This book contains a delightful collection of real case studies conducted in China, using relatively modest computer facilities in the past three decades or so. The collection includes case studies from geophysical exploration, Down's Syndrome, hormone release, Uranian range detection, freight and river flow forecasting, and others. A comprehensive introduction to the theory and method of time series is given prior to the case studies. The book should be a nice compendium to any serious course in time series analysis. To appreciate the contents of this book one must be familiar with matrix algebra, and a good knowledge of multivariate analysis; one also giving the students some insight into the applications.

University of North Carolina
Chapel Hill, U.S.A.  R.L. Smith

ELEMENTS OF MULTIVARIATE TIME SERIES ANALYSIS:
G.C. Reinsel. New York: Springer-Verlag, 1993, pp. xiv + 263, DM.88.00/gS.686.40/Sw.fr.88.00.

Contents:
1. Vector time series and model representations
2. Vector ARMA time series models and forecasting
3. Canonical structure of vector ARMA models
4. Initial model building and least squares estimation for vector ARMA models
5. Maximum likelihood estimation and model checking for vector ARMA models
6. Reduced-rank and nonstationary co-integrated models
7. State-space models, Kalman filtering, and related topics

Readership: Econometricians, statisticians

This book is exclusively devoted to the analysis of multiple-time series. In this the author has tried to provide an exhaustive account of identifiability, estimation, filtering aspects of vector ARMA models, and has illustrated the techniques with real examples. The approach is exclusively time domain, and barely two pages are devoted to spectral analysis. To appreciate the contents of this book one must be familiar with univariate time-series analysis, should have a good knowledge of matrix algebra, and a good know-ledge of multivariate analysis; one definitely must be familiar with canonical correlation analysis. Any reader who requires a thorough account of vector ARMA models will definitely benefit from this book.

University of Manchester
Institute of Science and Technology
Manchester, U.K.  T. Subba Rao

PROBABILITY THEORY, AN ANALYTIC VIEW. D.W. Strook.
Cambridge University Press, 1993, pp. xvi + 512, £30.00/US$49.95.

Contents:
1. Sums of independent random variables
2. The central limit theorem
3. Convergence of measures, infinite divisibility, and processes with independent increments
4. A celebration of Wiener's measure
5. Conditioning and martingales
6. Some applications of martingale theory
7. Continuous martingales and elementary diffusion theory

University of Kent
Canterbury, U.K.  H. Tong
8. A little classical potential theory

Readership: Graduate students of probability theory with a good background in probability and modern analysis

The author explains his fascination with inter-connections between probability and analysis. Not a first-time basic introduction, this book is valuable for deeper and wider ranging discussions. Its first half deals mainly with sums of independent random vari-ables and with Wiener's measure; conditioning and martingales appear in the second half. Chapter 6 deals with Burkholder's individual ergodic theorem, then develops and uses some theory of singular integrals to help give two derivations of Burkholder's in-equality. Chapter 8 includes discussion of the Dirichlet problem, K.L. Chung's interpretation of the capacitory distribution and Wiener's test for regu-larity. Numerous exercises to develop ideas further appear throughout the book.

Imperial College of Science, Technology and Medicine
London, U.K. C.J. Ridler-Rowe


Contents:

PART I : Communication and Regeneration
1. Heuristics
2. Markov models
3. Transition probabilities
4. Irreducibility
5. Pseudo-atoms
6. Topology and continuity
7. The nonlinear state space model

PART II : Stability Structures
8. Transience and recurrence
9. Harris and topological recurrence
10. The existence of \( \delta \)
11. Drift and regularity
12. Invariance and tightness

PART III: Convergence
13. Ergodicity
14. \( f \)-ergodicity and \( f \)-regularity
15. Geometric ergodicity
16. V-Uniform ergodicity
17. Sample paths and limit theorems
18. Positivity
19. Generalized classification criteria

PART IV : Appendices
A. Mud maps
B. Testing for stability
C. A glossary of model assumptions
D. Some mathematical background

Readership: Graduate students from mathematics, engineering, operations research and business

Both theory and applications of Markov chains in discrete time on general state space are discussed. This book nicely adds to the sparsely filled literature gap existing between treatments on Markov chains with countable state space and general theory of Markov processes. The result is a most informative and read-able text on one of the key themes in probability. 'Stability' in the title is to be interpreted in the widest possible sense, i.e. including such topics as recurrence of which many possible definitions exist, ergodicity, general stability for dynamical systems. In a field where one quickly may get lost in often non-standard definitions and a multiplicity of technical results, the authors have managed to convey to the reader a secure path of knowledge and techniques which leads confidently through the entire field. Well-chosen summaries, annotated comments and visually high-light-ing of key definitions and results add considerably to the scientific and pedagogic value of this text. Both researchers and users of Markov chain theory will find this scholarly written book indispensible. A definitive must on one's bookshelf, and an ideal text for use in a post-graduate course on the subject.

ETH-Zentrum
Zürich, Switzerland

OPERATOR-LIMIT DISTRIBUTIONS IN PROBABILITY THEORY

Contents:

1. Preliminaries
2. Convergence of types theorems, symmetry groups and decomposability semigroups
3. Operator-self-decomposable measures
4. Operator-stable measures

Epilogue

Readership: Researchers and advanced graduate students in probability

In a relatively short period of time nearly sixty years ago, the central limit problem for sums of independent random variables was completely solved: or was it? The classical results, associated with the names of Kolmogorov, Khinchin, Lévy, Gnedenko, Feller among others, impacted greatly the tools, directions and applications of modern probability, particularly through the study and application of the related in-finitely divisible process; for example, Poisson, Brownian, Lévy and Stable processes. But, as Loève quoted in his 1950 review of the central limit theorem (Ann. Math. Statist. 21, 321-338), "No sooner is Proteus caught than he changes his shape."

In rather recent times, attention has been focused upon the more general multi-dimensional form of the central limit problem where one studies the possible limit laws for sums of the form \( A(X_1+X_2+...+X_n)-B \).

Though the form is similar to that of the classical problem, the summands now are vectors and A and B are matrices. It is because of this structure that operator theory, semi-groups and Banach spaces enter so naturally into the discussion.

As in the classical case, many technical ana-lytic details are unavoidable, though it seems from this presentation that there is a certain cleanness to the details that results from this more general ap-proach. The authors provide a fairly complete set of preliminaries in both analysis and probability in their first two chapters, and then provide the solutions to their central limit problems in Chapters 3 (the "class L" or "self-decomposable" case) and 4 (the "stable" case). The book provides a well-written and fairly complete exposition of these recent developments.

University of Washington
Seattle, U.S.A. R. Pyke

Contents:
Glossary of Notations and Abbreviations
1. Introduction, by S.K. Mitra
2. Mathematical foundations of signal processing, by K. Steiglitz
3. Linear time-invariant discrete-time systems, by N.K. Bose
4. Finite impulse response filter design, by T. Saramäki
5. Infinite impulse response digital filter design, by W.E. Higgins and D.C. Munson, Jr.
6. Digital filter implementation considerations, by Y. Neuvo
7. Robust digital filter structures, by P.P. Vaidyanathan
8. Fast DFT and convolution algorithms, by H.V. Sorensen and C.S. Burrus
9. Finite arithmetic concepts, by W.K. Jenkins
10. Signal conditioning and interface circuits, by L.E. Larson and G.C. Temes
11. Hardware and architecture, by T. Thong and Y.C. Jenq
12. Software considerations, by J. Fadavi-Ardekan and K. Mondal
13. Special filter design, by P.A. Regalia
14. Multirate signal processing, by R. Ansari and B. Liu
16. Special analysis, by R. Kumaresan

Readership: Time-series researchers in statistics, econometrics and the physical sciences

Research in time series analysis is spread amongst the statistical, econometric, electrical engineering and general physical sciences literatures. In electrical engineering much of the research in time-series analysis takes place in the framework of digital signal processing. A main aim of this book is a distil-lation, primarily from the extensive electrical engineering literature, of the central ideas and primary methods of analysis, design, and implementation of digital signal processing methods. The book itself is huge in both size and coverage, and, with its excellent glossary of notations and abbreviations, is a potenti-ally very useful aid to researchers working at the interfaces of time-series analysis. Each chapter is written by a leading expert, and has its own reference list. The book is very well produced and has a coherent look and feel to it. Of most potential interest to statistical time-series analysts are the chapters on spectral analysis, adaptive filtering (stochastic gradient methods etc.), multirate signal processing (part of the theory of wavelets) and on various fast discrete Fourier transform algorithms with FORTRAN code. I feel that most mathematics or statistics departments could find this book very useful in the increasingly inter-disciplinary world of research.

Imperial College of Science, Technology and Medicine
London, U.K.

A.T. Walden


Contents:
1. Help
2. Science
3. Organised groups
4. The nature of problems
5. Operational research
6. Defining problems
7. Data collection and analysis
8. Models
9. Making choices
10. Implementation and solutions
11. Some organisational aspects of OR Postscript

Readership: Operational research students, teachers and practitioners, final-year undergraduates and postgraduates

This book covers the art of operational re-search, not its techniques. Mitchell draws on a life-time of experience helping to solve the problems facing organized groups by applying the methods and approaches used by science, the book's definition of operational research. The author emphasizes the needs and aspir-ations of different clients, singly and together, and the way that a group will have assorted perceptions of the same problems area. The approach of operational research is described in the later chapters. Here there is a clear sense of the messiness and conflicts found in the definition and description of many problems. There are exercises designed to make the reader think; these exercises cannot be lightly solved by turning to techniques on the computer. These and a series of case-studies convey, far better than most books on oper-ational research, the challenges and flavour of the subject.

University of Exeter
Exeter, U.K.
D.K. Smith

MODEL SOLVING IN MATHEMATICAL PROGRAMMING,

Contents:
1. The nature of mathematical programming
2. General methods for linear programming
3. Methods for specialist linear programming models
4. Computational implementation of the simplex method
5. Non-calculus methods for non-linear programming
6. General methods for integer programming
7. Computational implementation of the linear programming based branch-and-bound algorithm
8. Specialist methods for integer programming models

Readership: Operational researchers, mathematical programmers

In this book the solution methods of mathe-matical programming are explained by using numerical examples together with a commentary on the character of the methods. The author's aim is to impart understanding without using a real or pseudo-computer pro-gramming language or subjecting the reader to a rigor-ous mathematical approach. If you are happy with your current textbook on the simplex method, then it is not worth changing; however if you wish a well-written book that in addition has Karmarkar's algorithm, network models, integer programming and discusses computer im-plementation issues, then I recommend highly this book. This text complements Model Building in Operational Research by the same author; it is suitable for under-graduates and postgraduate students in a technical subject and requires a knowledge of matrix notation.

London School of Economics
London, U.K.

S. Powell
WHATEVER POSSESSED THE PRESIDENT? ACADEMIC EXPERTS succinctly what is still true today. This summarizes and intelligently sup-ports and encourages the work of science in government adequately meets the respon-sibilities unless it generously develops to the full its scientific and technological resources. No nation can maintain a position of leadership in the world of today unless it makes development of policies for the management and support of science. Dependence on the technical factors, the latter being concerned with matters that are political or administrative but made between "science policy" and "policy for science", the former being concerned with the assumptions. Each model is then presented systematically and clearly, classification of the relevant models according to the under-lying theoretical material. Chapter 8 gives three appli-cations, one linear and two non-linear programs, taken from the author's experience, and illustrates the use of the software on these problems. This book is intended for teachers and students with a background in mathematical programming.

London School of Economics
London, U.K. S. Powell


Contents:
1. Manufacturing system design and operation
2. A review of queueing theory
3. Modeling flexible manufacturing systems using queueing networks
4. Modeling production lines using queueing networks
5. Modeling transfer lines and assembly type systems using queueing networks
6. Simulation of manufacturing systems
7. Generative models for the buffer allocation problem in manufacturing systems

Readership: Lecturers, researchers and graduate students in operations research and related areas

Much work has been done on the modeling of manufacturing systems using queueing networks. The authors' aim is to collate these researches and hence promote further research. A background in probability and queueing theory is requisite; advanced mathematics is not. The book begins with two pages of acronyms from mathematics, statistics, operations research, queueing theory, manufacturing systems, and computing, for example, GEM, ETOP, HOCUS, PANACEA. A ten-page glossary of notations follows. There are two introductory chapters. Each of the next three chapters considers a different type of queueing network models, beginning with a classifi-cation of the relevant models according to the under-lying assumptions. Each model is then presented systematically and clearly, with appropriate diagrams and mathematics. The last two chapters examine simu-lation modeling, a very flexible and popular tool that complements mathematical analysis, and generative models. Every chapter has from two to seven pages of references. An interested and diligent reader will gain much from this reference volume.

University of St. Andrews
St. Andrews, U.K. A.W. Kemp

NOTES


This volume describes the relationship between sciences and the federal government of the United States of America. The distinction is made between "science policy" and "policy for science", the former being concerned with matters that are political or administrative but depend on the technical factors, the latter being concerned with the development of policies for the management and support of science. Almost fifty years ago, the then president, Harry S Truman, wrote: "No nation can maintain a position of leadership in the world of today unless it develops to the full its scientific and technological resources. No government adequately meets the respon-sibilities unless it generously and intelligently sup-ports and encourages the work of science in university industry and its own laboratories." This summarizes succinctly what is still true today.


Robert C. Wood worked for four American presidents, Truman, Eisenhower, Kennedy and Johnson, and watched the performance of five others. He answers the questions "Who are the experts who talk to the president, provide him with information and ideas, and advise him on policy issues?" The book ends with the sentence, "It is better that presidents be possessed of what knowledge we have, however incomplete, than to act on beliefs and convictions that simply cannot come to pass."


The author discusses the likely climatic, environmental, economic and societal impacts of the greenhouse effect on the United States of America over the next fifty years.

Lewis Wolpert is a research biologist and also a popularizer of science. He publishes, 1992].

Lewis Wolpert is a research biologist and also a popularizer of science. He explains what science is and what it is not.


In this edited volume, the fifteen authors discuss the literacy and cultural interpretation of popular scientific writing.


From the back cover: "Kantorovich analyzes the notion of discovery. He views the process as inference and questions whether there is logic or method to discovery. He provides an alternative perspective on scientific discovery that explains the difficulties in finding a satisfactory method of discovery. Within the framework of evolutionary epistemology, discovery is treated as a phenomenon in its own right having psycho-logical and social dimensions. Science is viewed as a continuation of the evolutionary process whereby cre-ative discovery plays a role similar to blind mutation in biological evolution. From this perspective, seren-dipi-ty and tinkering are key notions in understanding the creative process."


From the book jacket: "Fuzzy logic mimics the working of the human brain and is used in machines so they will think more like human beings. Japanese and Korean companies already apply fuzzy technology to the tune of billions of dollars a year in such products as air-conditioners (instead of producing an all-or-nothing blast of cold air, fuzzy air-conditioners con-stantly adjust to the precise temperature in the room and emit a corresponding degree of cooling air); com-puters; cameras and camcorders; auto engines, brakes, transmissions, and cruise controls; dishwashers; ele-vators; washing machines and dryers; microwave ovens; and televisions. Fuzzy logic is used in palmtop com-puters that recognize and translate handwritten characters. On tap are "smarter" computers and such medical advances as smart artificial body parts. Fuzzy logic even applies to ethical questions. For example, when does life begin?"


The author describes the Unidentified Flying Object (UFO) myth that invaded popular culture since the first "sighting" on June 24, 1947.


From the book jacket, "On April 23, 1992, NASA's $150 million COBE (Cosmic Background Explorer) satellite made one of the most monumental scientific breakthroughs of our century: the discovery of the long-sought "ripples in the fabric of space-time," brief fluctuations in microwave radiation still echoing from the first trillionth of a second after the cata-clysmic birth of creation. The first book to explore and explain the significance of this dramatic dis-covery, John Gribbin's In the Beginning uses the results to synthesize a startling new understanding of the universe. His portrait gives us a glimpse of the Universe's first birth pangs, the nature of life and the way evolution works, the geography of the Universe and all it contains, and the way in which the "black hole bounce" enables the Universe to reproduce itself. Along the way we learn why the laws of physics should be as they are and whether human beings have a special place in the living Universe."


The author gives the largely undocumented history of the early years of superconductivity. He uses letters and laboratory notebooks of H.K. Onnes and excerpts from the W. Meissner papers.


The origins and developments of mathematics are discussed from a theoretical rather than a historical perspective.


This is a reference book on American higher education. It gives an innovative approach to the presentation of educational information in the form of maps instead of the traditional portrayal of such data in.
tables and charts. The visual approach provides the reader with a clear, concise understanding of higher education in the United States of America and gives an overview of recent trends.

INSIDE COLLEGE UNDERGRADUATE EDUCATION FOR THE FUTURE.

This volume discusses the educational economic advantages and disadvantages for students and instructors at colleges and universities. The authors also examine national and international issues that define the forces which shape higher education.


This book has been published to commemorate the centennial of the University of California Press. The Press had its beginnings as a printer of monographs of the University's faculty when commercial publishers were not prepared to publish such works. Later the University of California Press became a full-fledged university press in the Oxford and Cambridge tradition. This history is chronicled in this volume.


This is a book of problems in probability and statistics. The problems are ordered by difficulty and topic and are such that they help the understanding of the subject. The problems cover the range from high school to graduate level.

TEN LECTURES ON THE PROBABILISTIC METHOD. 2nd edition.

Probabilistic estimates are important in fields like graph theory and combinatorics. Various applications of this technique are discussed. Compared with the first edition, the author has added various recent results. [Original 1986].


This book should be compared with Beard, Pentikäinen and Pesonen's 1984, third edition of Risk Theory. It offers a complete recompilation in the light of recent developments, concentrating in particular on those topics which are oriented towards practical applications. [Original 1969; 1984 edition Reviewed in Short Book Reviews, Vol. 4, p.34].


This volume contains the contributions to the multivariate environmental statistics component of the Seventh International Conference on Multivariate Analysis held at Pennsylvania State University in May 1992. From the Preface: "A purpose of this volume is to help with some examples that are of concern and interest today. It is hoped that the book will be a valuable addition to current statistical theory and practice in multivariate environmental statistics, and will be used by researchers, teachers and students alike."


This dictionary will help readers to understand Russian-language texts in probability, statistics and combinatorics. It contains entries related to these fields which have occurred in the last thirty years. The dictionary includes more than fifteen thousand terms.

PAPER EDITIONS OR REPRINTS


MATHEMATICAL BIOLOGY, 2nd corrected edition.


GOVERNMENT PUBLICATIONS


EMPIRICAL TESTS OF THE FORMATION OF EXPECTATIONS.
A Survey of Methods and Results. I. Svendsen. Oslo: Statistisk Sentralbyrå, 1993, pp. 52, N.Kr.75.00.


NEW JOURNALS


COLLECTED PAPERS, TABLES AND PROCEEDINGS


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MANAGING WITH INFORMATION TECHNOLOGY. R. Ennals and P. Molyneux (Eds.). London: Springer-Verlag, 1993, pp. xiii + 284, DM.58.00/ÖS.452.40/Sw.fr.58.00.


NONLINEAR EVOLUTION OF SPATIAL ECONOMIC SYSTEMS. P. Nijkamp and A. Reggiani (Eds.). Berlin: Springer-Verlag, 1993, pp. x + 285, DM.148.00/ÖS.1,154.40/Sw.fr.148.00.


SEMINAIRE DE PROBABILITES XXVII. J. Azéma, P.A. Meyer and M. Yor (Eds.). Berlin: Springer-Verlag, 1993, pp. vi + 327, DM.72.00/ÖS.561.60/Sw.fr.72.00.


BOOKS RECEIVED


Berlin: Springer-Verlag, 1993, pp. xii + 203,
DM.68.00/ÖS.530.40/Sw.fr.68.00.

NUMERICAL METHODS FOR PHYSICS. A.L. Garcia.
Englewood Cliffs, New Jersey: Prentice Hall,
1994, pp. xii + 368.


ONE-DIMENSIONAL DYNAMICS. W. de Melo and S. van Strien.
Berlin: Springer-Verlag, 1993, pp. xiii + 605,
DM.148.00/ÖS.1,154.40/Sw.fr.148.00.


PROJECTS IN SCIENTIFIC COMputation. R.E. Crandall.
New York: Springer-Verlag, 1994, pp. xiv + 470 + disk, DM.98.00/
ÖS.764.40/Sw.fr.98.00.


ÖS.733.20/Sw.fr.94.00.

STOCHASTIC PROCESSES AND POINT PROCESSES OF EXCURSIONS. J.A.M. van de Weide. Amsterdam: Centrum voor Wiskunde en Informatica, 1994, pp. 108, Dr.f.50.00.


Sw.fr.58.00.


