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Probabilités et processus stochastiques

Christoph BANDT, Siegfried GRAPH, Martina ZÄHLE. (Editors). — **Fractal geometry and stochastic II.** — Progress in probability, vol. 46. — Un vol. relié, 16×24, de x, 292 p. — ISBN 3-7643-6215-4. — Prix: SFr. 98.00. — Birkhäuser, Basel, 2000.

The combination of fractal geometry and stochastic methods can be used to create convincing models in many different areas of science such as biology, chemistry, computer science, mathematics and physics. The present book deals with the mathematical theory needed for this purpose. The book is addressed to mathematicians and scientists who are interested in any of the following topics: fractal dimensions, fractal measures and multifractals, self-similar and self-affine fractals, random fractals, stable processes, ergodic theory and dynamical systems, harmonic analysis and stochastic processes on fractals.

L.C.G. ROGERS, David WILLIAMS. — **Diffusions, Markov processes, and martingales. Vol. 1: Foundations.** — Second edition. — Cambridge Mathematical Library. — Un vol. broché, 15×23, de xvii, 385 p. — ISBN 0-521-77594-9. — Prix: £22.95. — Cambridge University Press, Cambridge, 2000.

The authors' aim is not to present the subject of Brownian motion as a dry part of mathematical analysis, but to convey its real meaning and fascination. The opening, heuristic chapter does just this, and it is followed by a comprehensive and self-contained account of the foundations of the theory of stochastic processes. Chapter III is a lively and readable treatment of the theory of stochastic processes.

L.C.G. ROGERS, David WILLIAMS. — **Diffusions, Markov processes and martingales. Vol. 2: Itô calculus.** — Cambridge mathematical library. — 2nd edition. — Un vol. broché, 15×23, de xiii, 480 p. — ISBN 0-521-77593-0. — Prix: £24.95. — Cambridge University Press, Cambridge, 2000.

Now available in paperback, this book has been prepared with readers' needs in mind, remaining a systematic treatment of the subject whilst retaining its vitality. The second volume follows on from the first, concentrating on stochastic integrals, stochastic differential equations, excursion theory, and the general theory of processes. Much effort has gone into making these subjects as accessible as possible by providing many concrete examples that illustrate techniques of calculation, and by treating all topics from the ground up, starting from simple cases. Many of the examples and proofs are new; some important calculational techniques appeared for the first time in this book. Together with Volume 1: *Foundations*, this book helps equip graduate students for research into a subject of great intrinsic interest and wide application in physics, biology, engineering, finance and computer science.

Statistique

Sampritt CHATTERJEE, Ali S. HADI, Bertram PRICE. — **Regression analysis by example.** — Wiley series in probability and statistics. Texts and references section. — Third edition. — Un vol. relié, 16×24, de xi, 359 p. — ISBN 0-471-31946-5. — Prix: £51.95. — John Wiley, New York, 2000.

This book explains the principles underlying exploratory data analysis, emphasizing data analysis rather than statistical theory. This is not just another edition of the book; it is a major rewriting and reorganization of the previous edition. The new edition is expanded and updated to reflect recent advances in the field, offering in-depth treatment of diagnostic plots, time series regression, multicollinearity, and logic regression. Suitable for anyone with an understanding of

elementary statistics, this third edition illustrates methods of regression analysis, with examples containing the types of irregularities commonly encountered in the real world. Each example isolates one or two techniques themselves, the required assumption, and the evaluated success of each technique. Each of the methods described can be carried out with most currently available statistical software packages.

Maurice COMTE, Joël GADEN. — **Statistiques et probabilités pour les sciences économiques et sociales.** — Collection Major. — Un vol. broché, 17, 5 × 24, de xviii, 517 p. — ISBN 2-13-049682-2. — Prix: FF 259.00. — Presses universitaires de France, Paris, 2000.

Cet ouvrage couvre la totalité du programme officiel de statistiques et probabilités figurant aux concours interne et externe du CAPES de Sciences économiques et sociales et s'adresse aussi aux étudiants des premiers cycles. Ce manuel, destiné à permettre un travail autonome, se caractérise par trois principes: ne pas séparer les techniques de leur usage, utiliser un minimum de formalisation mathématique et ne considérer aucune notion comme évidente. Les illustrations ou exemples sont traités dans le moindre détail et les nombreux exercices font appel au vécu, en utilisant des données économiques et sociologiques d'usage courant et sont accompagnés d'un corrigé entièrement rédigé.

Jean-Pierre LECOUTRE. — **Statistique et probabilités: travaux dirigés, rappels de cours, questions de réflexion, exercices d'entraînement, annales corrigées.** — Eco Sup, travaux dirigés. — Un vol. broché, 17 × 24, de vi, 209 p. — ISBN 2-10-003998-9. — Prix: FF 118.00. — Dunod, Paris, 2000, diffusé en Suisse par Havas Services Suisse, Fribourg.

Les ouvrages de la série TD répondent à trois objectifs, apprendre grâce à un résumé de cours, comprendre par l'intermédiaire de questions de réflexion, appliquer par des exercices d'entraînement. Complété par un dernier chapitre entièrement consacré à des sujets d'annales, cet ouvrage couvre en 190 questions et exercices, les bases des statistiques et probabilités: notion de probabilité, variable aléatoire discrète, variable aléatoire continue, couple et vecteurs aléatoires, notions de convergence, estimation ponctuelle, estimation par intervalle de confiance, théorie des tests.

Hardeo SAHAI, Mohammed I. AGEEL. — **The analysis of variance: fixed, random and mixed models.** — Un vol. relié, 16 × 24, de xxxv, 742 p. — ISBN 3-7643-4012-6. — Prix: SFr. 128.00. — Birkhäuser, Boston, 2000.

The book provides a detailed and thorough introduction to fixed, random and mixed effects analysis of variance, covering models, populations, hypotheses and assumptions involved. It presents a comprehensive, logical and systematic treatment of the commonly employed analysis of variance designs, giving a parallel and tandem discussion of fixed, random and mixed effects models. The goal of the book is to bridge the gap between an overly abstract viewpoint and one that underplays the concepts, ideas and essential statistical insights. A balance of both perspectives is needed to use analysis of variance models with an emphasis on intelligent use of applications and methods.

Analyse numérique

Gary D. KNOTT. — **Interpolating cubic splines.** — Progress in computer science and applied logic, vol. 18. — Un vol. relié, 16 × 24, de xii, 244 p. — ISBN 0-8176-4100-9. — Prix: SFr. 98.00. — Birkhäuser, Boston, 2000.

This book emphasizes interpolating splines. Almost always, the cubic polynomial form is treated in depth. Interpolating cubic splines covers a wide variety of explicit approaches to