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	Nota di contenuto	Introduction -- Probabilities -- Random Variables: Distributions -- Computer-Generated Random Numbers: The Monte Carlo Method -- Some Important Distributions and Theorems -- Samples -- The Method of Maximum Likelihood -- Testing Statistical Hypotheses -- The Method of Least Squares -- Function Minimization -- Analysis of Variance -- Linear and Polynomial Regression -- Time-Series Analysis -- A) Matrix Calculations -- B) Combinatorics -- C) Formulas and Methods for the Computation of Statistical Functions -- D) The Gamma Function and Related Functions: Methods and Programs for their Computation -- E) Utility Programs -- F) The Graphics Class DatanGraphics -- G) Problems, Hints and Solutions and Programming Problems -- H) Collection of Formulas -- I) Statistical Formulas -- List

of Computer Programs.

Sommario/riassunto	The fourth edition of this successful textbook presents a comprehensive introduction to statistical and numerical methods for the evaluation of empirical and experimental data. Equal weight is given to statistical theory and practical problems. The concise mathematical treatment of the subject matter is illustrated by many examples, and for the present edition a library of Java programs has been developed. It comprises methods of numerical data analysis and graphical representation as well as many example programs and solutions to programming problems. The programs (source code, Java classes, and documentation) and extensive appendices to the main text are available for free download from the book's page at www.springer.com. Contents Probabilities. Random variables. Random numbers and the Monte Carlo Method. Statistical distributions (binomial, Gauss, Poisson). Samples. Statistical tests. Maximum Likelihood. Least Squares. Regression. Minimization. Analysis of Variance. Time series analysis. Audience The book is conceived both as an introduction and as a work of reference. In particular it addresses itself to students, scientists and practitioners in science and engineering as a help in the analysis of their data in laboratory courses, working for bachelor or master degrees, in thesis work, and in research and professional work. "The book is concise, but gives a sufficiently rigorous mathematical treatment of practical statistical methods for data analysis; it can be of great use to all who are involved with data analysis." Physicalia "This lively and erudite treatise covers the theory of the main statistical tools and their practical applications…a first rate university textbook, and good background material for the practicing physicist." Physics Bulletin The Author Siegmund Brandt is Emeritus Professor of Physics at the University of Siegen. With his group he worked on experiments in elementary-particle physics at the research centers DESY in Hamburg and CERN in Geneva in which the analysis of the experimental data plays an important role. He is author or coauthor of textbooks which have appeared in ten languages.