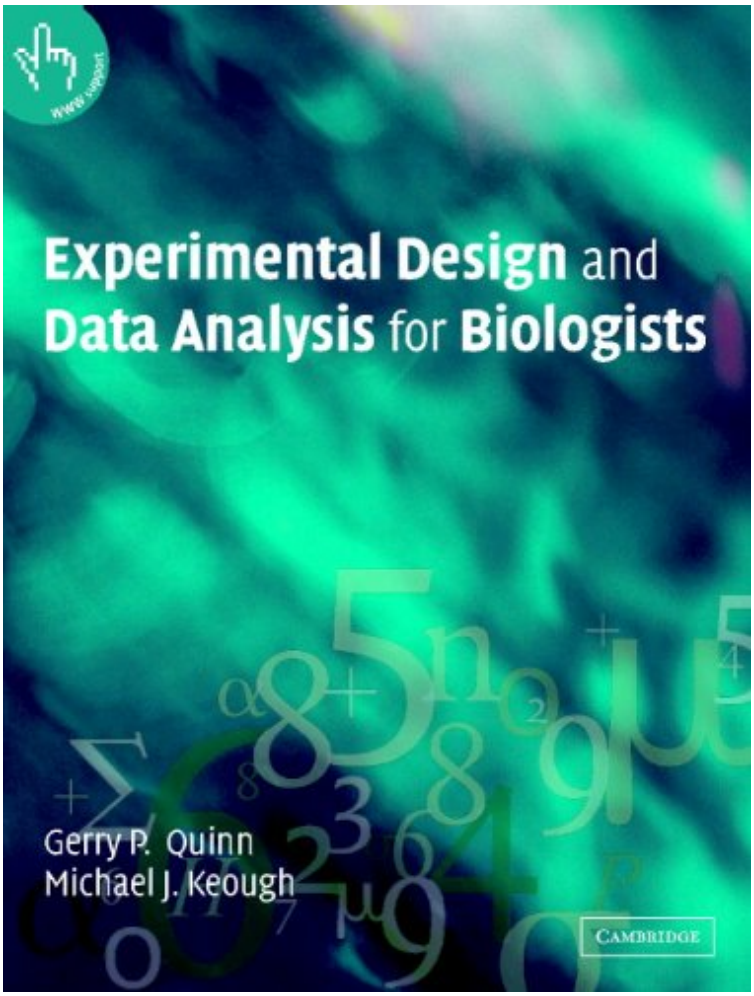
Experimental Design and Data Analysis for Biologists



Par Gerry P. Quinn, Michael J. Keough
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Description :

Prsentation de l'diteurAn essential textbook for any student or researcher in biology needing to design experiments, sample programs or analyse the resulting data. The text begins with a revision of estimation and hypothesis testing methods, covering both classical and Bayesian philosophies, before advancing to the analysis of linear and generalized linear models. Topics covered include linear and logistic regression, simple and complex ANOVA models (for factorial, nested, block, split-plot and repeated measures and covariance designs), and log-linear models. Multivariate techniques, including classification and ordination, are then introduced. Special emphasis is placed on checking assumptions, exploratory data analysis and presentation of results. The main analyses are illustrated with many examples from published papers and there is an extensive reference list to both the statistical and biological literature. The book is supported by a website that provides all data sets, questions for each chapter and links to software.Revue de presse'At last, a

book that provides a readable introduction to nuances of statistical methods and analysis a wonderful book that is packed with lots of practical advice ' Journal of Experimental Marine Biology and Ecology' this is clearly written text with a simple no-nonsense approach to the topic.' TEG News' the book is well written and well presented with a good range of interesting and realistic examples the book gave a very substantial and worthwhile study of good statistical practice in the design and analysis of biological experiments. I recommend it to anyone involved in quantitative biological research.' Journal of Agricultural Science'Quinn and Keough make plenty of reference to the recent and primary statistical literature, yet their book does not seem inaccessible or daunting the text often ventures into statically uncertain territory, and Quinn and Keough do an excellent job of evenhandedly summarizing any statistical debates and philosophies then giving pragmatic suggestions to how best to proceed with analyses. Readers will find themselves adequately and interestedly informed Quinn and Keough make extensive use of data sets deriving from real, and recently published, studies There are also unexpected bonus sections, such as the useful, and at times fun, chapter on presenting the results of analysis both in reports and in seminars. In general, one certainly has the impression that the authors set out to write a clear, comprehensive and valuable book: they have succeeded.' Animal Behaviour' highly recommended ' Ethology' the authors do go a long way towards success in their aim of encouraging 'readers to understand the models underlying the most common experimental designs' and to approach proper data analysis with more confidence. The web support is also very useful especially for items that the authors added post-publication '. Primate Eye' an essential textbook that can be warmly recommended to any student or researcher in biology who needs to design experiments, devise sampling programs and analyze the resulting data There is a wealth of information that is usually only found in separate sources.' Basic and Applied Ecology' an essential textbook for students and researchers in biology needing to design experiments, sampling programs or analyze the resulting data.' Folia GeobotanicaPrsentation de l'diteurAn essential textbook for any student or researcher in biology needing to design experiments, sample programs or analyse the resulting data. The text begins with a revision of estimation and hypothesis testing methods, covering both classical and Bayesian philosophies, before advancing to the analysis of linear and generalized linear models. Topics covered include linear and logistic regression, simple and complex ANOVA models (for factorial, nested, block, split-plot and repeated measures and covariance designs), and log-linear models. Multivariate techniques, including classification and ordination, are then introduced. Special emphasis is placed on checking assumptions, exploratory data analysis and presentation of results. The main analyses are illustrated with many examples from published papers and there is an extensive reference list to both the statistical and biological literature. The book is supported by a website that provides all data sets, questions for each chapter and links to software.