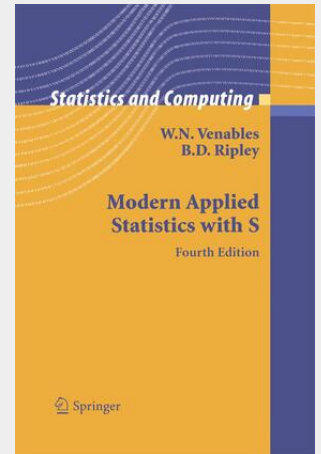


Modern Applied Statistics with S

S is a powerful environment for the statistical and graphical analysis of data. It provides the tools to implement many statistical ideas that have been made possible by the widespread availability of workstations having good graphics and computational capabilities. This book is a guide to using S environments to perform statistical analyses and provides both an introduction to the use of S and a course in modern statistical methods. Implementations of S are available commercially in S-PLUS(R) workstations and as the Open Source R for a wide range of computer systems. The aim of this book is to show how to use S as a powerful and graphical data analysis system. Readers are assumed to have a basic grounding in statistics, and so the book is intended for would-be users of S-PLUS or R and both students and researchers using statistics.

Throughout, the emphasis is on presenting practical problems and full analyses of real data sets. Many of the methods discussed are state of the art approaches to topics such as linear, nonlinear and smooth regression models, tree-based methods, multivariate analysis, pattern recognition, survival analysis, time series and spatial statistics. Throughout modern techniques such as robust methods, non-parametric smoothing and bootstrapping are used where appropriate. This fourth edition is intended for users of S-PLUS 6.0 or R 1.5.0 or later. A substantial change from the third edition is updating for the current versions of S-PLUS and adding coverage of R. The introductory material has been rewritten to emphasize the import, export and manipulation of data. Increased computational power allows even more computer-intensive methods to be used, and methods such as GLMMs,

S-PLUS is a powerful environment for the statistical and graphical analysis of data. It provides the tools to implement many statistical ideas which have been made possible by the widespread availability of workstations having good graphics and computational capabilities. This book is a guide to using S-PLUS to perform statistical analyses and provides both an introduction to the use of S-PLUS and a course in modern statistical methods. S-PLUS is available for both Windows and UNIX workstations, and both versions are covered in depth. The aim of the book is to show how to use S-PLUS as a powerful and graphical data analysis system. Readers are assumed to have a basic grounding in statistics, and so the book is intended for would-be users of S-PLUS and both students and researchers using statistics. Throughout, the emphasis is on presenting practical problems and full analyses of real data sets. Many of the methods discussed are state-of-the-art approaches to topics such as linear, nonlinear, and smooth regression models, tree-based methods, multivariate analysis and pattern recognition, survival analysis, time series and spatial statistics. Throughout, modern techniques such as robust methods, non-parametric smoothing, and bootstrapping are used where appropriate. This third edition is intended for users of S-PLUS 4.5, 5.0, 2000 or later, although S-PLUS 3.3/4 are also considered. The major change from the second edition is coverage of the current versions of S-PLUS. The material has been extensively rewritten using new examples and the latest computationally intensive methods. The companion volume on S Programming will provide an in-depth guide for those writing software in the S language. The authors have written several software libraries that enhance S-PLUS; these and all the datasets used are available on the Internet in versions for Windows and UNIX. There are extensive on-line complements covering advanced material, user-contributed extensions, further exercises, and new features of S-PLUS as they are introduced. Dr. Venables is now Statistician with CSRIO in Queensland, having been at the Department of Statistics, University of Adelaide, for many years previously. He has given many short courses on S-PLUS in Australia, Europe, and the USA. Professor Ripley holds the Chair of Applied Statistics at the University of Oxford, and is the author of four other books on spatial statistics, simulation, pattern recognition, and neural networks.



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