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Projections -- 2.1.5 Principal Component Analysis -- 2.2 Statistical Background -- 2.2.1 Estimation Methods -- 2.2.1.1 Least Squares -- 2.2.1.2 Maximum Likelihood -- 2.2.2 Regression Methods -- 2.2.2.1 Multiple Linear Regression: Full Rank Case -- 2.2.2.2 Multiple Linear Regression Using Dummy Variables -- 2.2.2.3 Multiple Linear Regression: Rank Deficient Case -- 2.2.2.4 Penalized Regression -- 2.2.2.5 Principal Component Regression -- 2.2.2.6 Partial Least Squares -- 2.2.2.7 Redundancy Analysis -- 2.2.3 Significance Tests -- 2.2.3.1 Classical Tests -- 2.2.3.2 Permutation Tests -- 2.2.3.3 Likelihood Ratio Tests -- 2.3 Association Measures -- 2.3.1 Pearson and Spearman Correlation Coefficients -- 2.3.2 Problems with Correlations -- Chapter 3 Linear Models -- 3.1 Introduction -- 3.2 Simple ANOVA Models.
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Sommario/riassunto

"This book presents an overview of available methods to analyze high-dimensional data that are obtained through applying an experimental design. This type of of data is often collected in the natural and life sciences, and many methods for data analysis have been developed in recent years. Following an introduction and overview of the basic theory from a mathematical and statistical perspective, the book introduces the available methods and their mutual relationships, including coverage of ASCA, APCA and PC-ANOVA, ASCA , LiMM-PCA and RM-ASCA , PERMANOVA. Various alternative methods and extensions are covered, followed by a thorough review of application in areas including metabolomics, microbiomoe, gene expression, proteomics, food science, sensory science and chemistry. The book concludes with discussions on commercially available and and open-source software for application of these methods."-- Provided by publisher.