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Nota di contenuto	APPLIED MULTIWAY DATA ANALYSIS; CONTENTS; Foreword; Preface; PART I DATA, MODELS, AND ALGORITHMS; 1 Overture; 1.1 Three-way and multiway data; 1.2 Multiway data analysis; 1.3 Before the arrival of three-mode analysis; 1.4 Three-mode data-analytic techniques; 1.5 Example: Judging Chopin's preludes; 1.6 Birth of the Tucker model; 1.7 Current status of multiway analysis; 2 Overview; 2.1 What are multiway data?; 2.2 Why multiway analysis?; 2.3 What is a model?; 2.4 Some history; 2.5 Multiway models and methods; 2.6 Conclusions; 3 Three-Way and Multiway Data; 3.1 Chapter preview; 3.2 Terminology 3.3 Two-way solutions to three-way data3.4 Classification principles; 3.5 Overview of three-way data designs; 3.6 Fully crossed designs; 3.7 Nested designs; 3.8 Scaling designs; 3.9 Categorical data; 4 Component Models for Fully-Crossed Designs; 4.1 Introduction; 4.2 Chapter preview; 4.3 Two-mode modeling of three-way data; 4.4 Extending two-mode component models to three-mode models; 4.5

Tucker models; 4.6 Parafac models; 4.7 ParaTuck2 model; 4.8 Core arrays; 4.9 Relationships between component models; 4.10 Multiway component modeling under constraints; 4.11 Conclusions

5 Algorithms for Multiway Models 5.1 Introduction; 5.2 Chapter preview; 5.3 Terminology and general issues; 5.4 An example of an iterative algorithm; 5.5 General behavior of multiway algorithms; 5.6 The Parallel factor model - Parafac; 5.7 The Tucker models; 5.8 STATIS; 5.9 Conclusions; PART II DATA HANDLING, MODEL SELECTION, AND INTERPRETATION; 6 Preprocessing; 6.1 Introduction; 6.2 Chapter preview; 6.3 General considerations; 6.4 Model-based arguments for preprocessing choices; 6.5 Content-based arguments for preprocessing choices; 6.6 Preprocessing and specific multiway data designs

6.7 Centering and analysis-of-variance models: Two-way data 6.8 Centering and analysis-of-variance models: Three-way data; 6.9 Recommendations; 7 Missing Data in Multiway Analysis; 7.1 Introduction; 7.2 Chapter preview; 7.3 Handling missing data in two-mode PCA; 7.4 Handling missing data in multiway analysis; 7.5 Multiple imputation in multiway analysis: Data matters; 7.6 Missing data in multiway analysis: Practice; 7.7 Example: Spanjer's Chromatography data; 7.8 Example: NICHD Child care data; 7.9 Further applications; 7.10 Computer programs for multiple imputation

8 Model and Dimensionality Selection 8.1 Introduction; 8.2 Chapter preview; 8.3 Sample size and stochastics; 8.4 Degrees of freedom; 8.5 Selecting the dimensionality of a Tucker model; 8.6 Selecting the dimensionality of a Parafac model; 8.7 Model selection from a hierarchy; 8.8 Model stability and predictive power; 8.9 Example: Chopin prelude data; 8.10 Conclusions; 9 Interpreting Component Models; 9.1 Chapter preview; 9.2 General principles; 9.3 Representations of component models; 9.4 Scaling of components; 9.5 Interpreting core arrays; 9.6 Interpreting extended core arrays 9.7 Special topics

Sommario/riassunto

From a preeminent authority-a modern and applied treatment of multiway data analysis This groundbreaking book is the first of its kind to present methods for analyzing multiway data by applying multiway component techniques. Multiway analysis is a specialized branch of the larger field of multivariate statistics that extends the standard methods for two-way data, such as component analysis, factor analysis, cluster analysis, correspondence analysis, and multidimensional scaling to multiway data. Applied Multiway Data Analysis presents a unique, thorough, and authoritative treatment of