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Nota di contenuto	Permutation Tests for Complex Data; Contents; Preface; Notation and Abbreviations; 1 Introduction; 1.1 On Permutation Analysis; 1.2 The Permutation Testing Principle; 1.2.1 Nonparametric Family of Distributions; 1.2.2 The Permutation Testing Principle; 1.3 Permutation Approaches; 1.4 When and Why Conditioning is Appropriate; 1.5 Randomization and Permutation; 1.6 Computational Aspects; 1.7 Basic Notation; 1.8 A Problem with Paired Observations; 1.8.1 Modelling Responses; 1.8.2 Symmetry Induced by Exchangeability; 1.8.3 Further Aspects; 1.8.4 The Student's t-Paired Solution 1.8.5 The Signed Rank Test Solution1.8.6 The McNemar Solution; 1.9 The Permutation Solution; 1.9.1 General Aspects; 1.9.2 The Permutation Sample Space; 1.9.3 The Conditional Monte Carlo Method; 1.9.4 Approximating the Permutation Distribution; 1.9.5 Problems and Exercises; 1.10 A Two-Sample Problem; 1.10.1 Modelling Responses; 1.10.2 The Student t Solution; 1.10.3 The Permutation Solution; 1.10.4 Rank Solutions; 1.10.5 Problems and Exercises; 1.11 One-Way ANOVA; 1.11.1 Modelling Responses; 1.11.2 Permutation Solutions; 1.11.3

Problems and Exercises

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2.6 Examples of One-Sample Problems2.6.1 A Problem with Repeated Observations; 2.6.2 Problems and Exercises; 2.7 Examples of Multi-Sample Problems; 2.8 Analysis of Ordered Categorical Variables; 2.8.1 General Aspects; 2.8.2 A Solution Based on Score Transformations; 2.8.3 Typical Goodness-of-Fit Solutions; 2.8.4 Extension to Non-Dominance Alternatives and C Groups; 2.9 Problems and Exercises; 3 Further Properties of Permutation Tests; 3.1 Unbiasedness of Two-sample Tests; 3.1.1 One-Sided Alternatives; 3.1.2 Two-Sided Alternatives; 3.2 Power Functions of Permutation Tests

3.2.1 Definition and Algorithm for the Conditional Power3.2.2 The Empirical Conditional ROC Curve; 3.2.3 Definition and Algorithm for the Unconditional Power: Fixed Effects; 3.2.4 Unconditional Power: Random Effects; 3.2.5 Comments on Power Functions; 3.3 Consistency of Permutation Tests; 3.4 Permutation Confidence Interval for d; 3.4.1 Problems and Exercises; 3.5 Extending Inference from Conditional to Unconditional; 3.6 Optimal Properties; 3.6.1 Problems and Exercises; 3.7 Some Asymptotic Properties; 3.7.1 Introduction; 3.7.2 Two Basic Theorems; 3.8 Permutation Central Limit Theorems

3.8.1 Basic Notions

Sommario/riassunto

Complex multivariate testing problems are frequently encountered in many scientific disciplines, such as engineering, medicine and the social sciences. As a result, modern statistics needs permutation testing for complex data with low sample size and many variables, especially in observational studies. The Authors give a general overview on permutation tests with a focus on recent theoretical advances within univariate and multivariate complex permutation testing problems, this book brings the reader completely up to date with today's current thinking. Key Features:Examines the mos