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Nota di contenuto	Statistical Tests for Mixed Linear Models; Contents; Preface; 1. Nature of Exact and Optimum Tests in Mixed Linear Models; 1.1. Introduction; 1.2. Exact F-Tests; 1.3. Optimality of Tests; 1.3.1. Uniformly Most Powerful Similar and Uniformly Most Powerful Unbiased Tests; 1.3.2. Uniformly Most Powerful Invariant and Locally Most Powerful or Locally Best Invariant Tests; Appendix 1.1. Distribution of a Maximal Invariant T (x): Wijsman's Representation Theorem; Bibliography; 2. Balanced Random and Mixed Models; 2.1. Introduction; 2.2. Balanced Models - Notations and Definitions 2.3. Balanced Model Properties2.4. Balanced Mixed Models: Distribution Theory; 2.5. Derivation of Optimum Tests; 2.5.1. A Numerical Example; 2.6. Approximate and Exact Tests; 2.6.1. Satterthwaite's Approximation; 2.6.2. Exact Unbiased Tests of Bartlett-Scheffe Type; Exercises; Bibliography; 3. Measures of Data Imbalance; 3.1.

Introduction; 3.2. The Effects of Imbalance; 3.2.1. The Variance of 2; 3.2.2. The Probability of a Negative 2; 3.2.3. Power of the Test Concerning 2; 3.3. Measures of Imbalance for the One-Way Model; 3.3.1. The Effect of Imbalance on  $\text{Var}(2)$ ; 3.3.2. The Effect of Imbalance on the Test Concerning 23.4. A General Procedure For Measuring Imbalance; 3.4.1. The One-Way Classification Model; 3.4.2. The Two-Way Classification Model; 3.4.3. The Three-Way Classification Model; 3.5. Special Types of Imbalance; 3.5.1. The Two-Fold Nested Classification Model; 3.5.2. A Model With a Mixture of Cross-Classified and Nested Effects; 3.6. A General Method for Determining the Effect of Imbalance; 3.6.1. Generation of Designs Having a Specified Degree of Imbalance for the One-Way Model; 3.6.2. An Example; 3.7. Summary

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## Sommario/riassunto

An advanced discussion of linear models with mixed or random effects. In recent years a breakthrough has occurred in our ability to draw inferences from exact and optimum tests of variance component models, generating much research activity that relies on linear models with mixed and random effects. This volume covers the most important research of the past decade as well as the latest developments in hypothesis testing. It compiles all currently available results in the area of exact and optimum tests for variance component models and offers the only comprehensive treatment for these