

1. Record Nr.	UNINA9910877199403321
Autore	Hinkelmann Klaus <1932->
Titolo	Design and analysis of experiments . Volume 2 Advanced experimental design // Klaus Hinkelmann, Oscar Kempthorne
Pubbl/distr/stampa	Hoboken, NJ, : Wiley, 2005
ISBN	1-280-27549-9 9786610275496 0-470-32269-1 0-471-70994-8 0-471-70993-X
Descrizione fisica	1 online resource (812 p.)
Collana	Wiley series in probability and mathematical statistics. Applied probability and statistics
Altri autori (Persone)	KempthorneOscar
Disciplina	001.4/34 001.434 519.5
Soggetti	Experimental design Mathematical stastics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Kempthorne's name appears first on previous ed.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Design and Analysis of Experiments; Contents; Preface; 1 General Incomplete Block Design; 1.1 Introduction and Examples; 1.2 General Remarks on the Analysis of Incomplete Block Designs; 1.3 The Intrablock Analysis; 1.3.1 Notation and Model; 1.3.2 Normal and Reduced Normal Equations; 1.3.3 The C Matrix and Estimable Functions; 1.3.4 Solving the Reduced Normal Equations; 1.3.5 Estimable Functions of Treatment Effects; 1.3.6 Analyses of Variance; 1.4 Incomplete Designs with Variable Block Size; 1.5 Disconnected Incomplete Block Designs; 1.6 Randomization Analysis; 1.6.1 Derived Linear Model 1.6.2 Randomization Analysis of ANOVA Tables 1.7 Interblock Information in an Incomplete Block Design; 1.7.1 Introduction and Rationale; 1.7.2 Interblock Normal Equations; 1.7.3 Nonavailability of Interblock Information; 1.8 Combined Intra- and Interblock Analysis; 1.8.1 Combining Intra- and Interblock Information; 1.8.2 Linear Model;

1.8.3 Normal Equations; 1.8.4 Some Special Cases; 1.9 Relationships Among Intra-block, Interblock, and Combined Estimation; 1.9.1 General Case; 1.9.2 Case of Proper, Equireplicate Designs; 1.10 Estimation of Weights for the Combined Analysis  
 1.10.1 Yates Procedure 1.10.2 Properties of Combined Estimators; 1.11 Maximum-Likelihood Type Estimation; 1.11.1 Maximum-Likelihood Estimation; 1.11.2 Restricted Maximum-Likelihood Estimation; 1.12 Efficiency Factor of an Incomplete Block Design; 1.12.1 Average Variance for Treatment Comparisons for an IBD; 1.12.2 Definition of Efficiency Factor; 1.12.3 Upper Bound for the Efficiency Factor; 1.13 Optimal Designs; 1.13.1 Information Function; 1.13.2 Optimality Criteria; 1.13.3 Optimal Symmetric Designs; 1.13.4 Optimality and Research; 1.14 Computational Procedures  
 1.14.1 Intra-block Analysis Using SAS PROC GLM 1.14.2 Intra-block Analysis Using the Absorb Option in SAS PROC GLM; 1.14.3 Combined Intra- and Interblock Analysis Using the Yates Procedure; 1.14.4 Combined Intra- and Interblock Analysis Using SAS PROC MIXED; 1.14.5 Comparison of Estimation Procedures; 1.14.6 Testing of Hypotheses; 2 Balanced Incomplete Block Designs; 2.1 Introduction; 2.2 Definition of the BIB Design; 2.3 Properties of BIB Designs; 2.4 Analysis of BIB Designs; 2.4.1 Intra-block Analysis; 2.4.2 Combined Analysis; 2.5 Estimation of ; 2.6 Significance Tests  
 2.7 Some Special Arrangements 2.7.1 Replication Groups Across Blocks; 2.7.2 Grouped Blocks; 2.7.3 -Resolvable BIB Designs with Replication Groups Across Blocks; 2.8 Resistant and Susceptible BIB Designs; 2.8.1 Variance-Balanced Designs; 2.8.2 Definition of Resistant Designs; 2.8.3 Characterization of Resistant Designs; 2.8.4 Robustness and Connectedness; 3 Construction of Balanced Incomplete Block Designs; 3.1 Introduction; 3.2 Difference Methods; 3.2.1 Cyclic Development of Difference Sets; 3.2.2 Method of Symmetrically Repeated Differences; 3.2.3 Formulation in Terms of Galois Field Theory  
 3.3 Other Methods

---

Sommario/riassunto

A comprehensive overview of experimental design at the advanced level. The development and introduction of new experimental designs in the last fifty years has been quite staggering and was brought about largely by an ever-widening field of applications. Design and Analysis of Experiments, Volume 2: Advanced Experimental Design is the second of a two-volume body of work that builds upon the philosophical foundations of experimental design set forth half a century ago by Oscar Kempthorne, and features the latest developments in the field. Volume 1: An Introduction to Experimental Design intr

---