1. Record Nr. UNINA9910830548303321

Autore	McCulloch Charles E.
Titolo	Generalized, linear, and mixed models / / Charles E. McCulloch, Shayle R. Searle
Pubbl/distr/stampa	New York, [New York] : , : John Wiley & Sons, Ltd, , 2001 ©2001
ISBN	1-280-27278-3 9786610272785 0-470-34244-7 0-471-65404-3 0-471-72207-3
Descrizione fisica	1 online resource (358 p.)
Collana	Wiley Series in Probability and Statistics., Texts, References, and Pocketbooks Section
Disciplina	519.5 519.535
Soggetti	Linear models (Statistics)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	CONTENTS; PREFACE; 1 INTRODUCTION; 1.1 MODELS; a. Linear models (LM) and linear mixed models (LMM); b. Generalized models (GLMs and GLMMs); 1.2 FACTORS, LEVELS, CELLS, EFFECTS AND DATA; 1.3 FIXED EFFECTS MODELS; a. Example 1: Placebo and a drug; b. Example 2: Comprehension of humor; c. Example 3: Four dose levels of a drug; 1.4 RANDOM EFFECTS MODELS; a. Example 4: Clinics; b. Notation; i. Properties of random effects in LMMs; ii. The notation of mathematical statistics; iii. Variance of y; iv. Variance and conditional expected values; c. Example 5: Ball bearings and calipers 1.5 LINEAR MIXED MODELS (LMMs)a. Example 6: Medications and clinics; b. Example 7: Drying methods and fabrics; c. Example 8: Potomac River Fever; d. Regression models; e. Longitudinal data; f. Model equations; 1.6 FIXED OR RANDOM?; a. Example 9: Clinic effects; b. Making a decision; 1.7 INFERENCE; a. Estimation; i. Maximum likelihood (ML); ii. Restricted maximum likelihood (REML); iii. Solutions and estimators; iv. Bayes theorem; v. Quasi-likelihood estimation; vi.

Generalized estimating equations; b. Testing; i. Likelihood ratio test (LRT); ii. Wald's procedure; c. Prediction
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c. Unbalanced datai. Likelihood; ii. ML equations and their solutions; iii. ML estimators; d. Bias; e. Sampling variances; 2.3 NORMALITY, RANDOM EFFECTS AND REML; a. Balanced data; i. Likelihood; ii. REML equations and their solutions; iii. REML estimators; iv. Comparison with ML; v. Bias; vi. Sampling variances; b. Unbalanced data; 2.4 MORE ON RANDOM EFFECTS AND NORMALITY; a. Tests and confidence intervals; i. For the overall mean, ; ii. For [sup(2)]; iii. For [sup(2)][sub(a)]; b. Predicting random effects; i. A basic result; ii. In a 1-way classification
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iii. Means, variances, and covariances

Sommario/riassunto

Wiley Series in Probability and StatisticsA modern perspective on mixed modelsThe availability of powerful computing methods in recent decades has thrust linear and nonlinear mixed models into the mainstream of statistical application. This volume offers a modern perspective on generalized, linear, and mixed models, presenting a unified and accessible treatment of the newest statistical methods for analyzing correlated, nonnormally distributed data.As a follow-up to Searle's classic, Linear Models, and Variance Components by Searle, Casella, and McCulloch, this new work progresses