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Nota di contenuto	Preface -- 1 A Brief Introduction -- 2 Selected Matrix Algebra Topics and Results -- 3 Generalized Inverses and Solutions to Systems of Linear Equations -- 4 Moments of a Random Vector and of Linear and Quadratic Forms in a Random Vector -- 5 Types of Linear Models -- 6 Estimability -- 7 Least Squares Estimation for the Gauss-Markov Model -- 8 Least Squares Geometry and the Overall ANOVA -- 9 Least Squares Estimation and ANOVA for Partitioned Models -- 10 Constrained Least Squares Estimation and ANOVA -- 11 Best Linear Unbiased Estimation for the Aitken Model -- 12 Model Misspecification -- 13 Best Linear Unbiased Prediction -- 14 Distribution Theory -- 15 Inference for Estimable and Predictable Functions -- 16 Inference for Variance-Covariance Parameters -- 17 Empirical BLUE and BLUP -- Index.
Sommario/riassunto	This textbook presents a unified and rigorous approach to best linear unbiased estimation and prediction of parameters and random quantities in linear models, as well as other theory upon which much of the statistical methodology associated with linear models is based. The single most unique feature of the book is that each major concept or

result is illustrated with one or more concrete examples or special cases. Commonly used methodologies based on the theory are presented in methodological interludes scattered throughout the book, along with a wealth of exercises that will benefit students and instructors alike. Generalized inverses are used throughout, so that the model matrix and various other matrices are not required to have full rank. Considerably more emphasis is given to estimability, partitioned analyses of variance, constrained least squares, effects of model misspecification, and most especially prediction than in many other textbooks on linear models. This book is intended for master and PhD students with a basic grasp of statistical theory, matrix algebra and applied regression analysis, and for instructors of linear models courses. Solutions to the book's exercises are available in the companion volume Linear Model Theory - Exercises and Solutions by the same author.