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Nota di contenuto	HIGH-DIMENSIONAL COVARIANCE ESTIMATION; CONTENTS; PREFACE; I MOTIVATION AND THE BASICS; 1 INTRODUCTION; 1.1 Least Squares and Regularized Regression; 1.2 Lasso: Survival of the Bigger; 1.3 Thresholding the Sample Covariance Matrix; 1.4 Sparse PCA and Regression; 1.5 Graphical Models: Nodewise Regression; 1.6 Cholesky Decomposition and Regression; 1.7 The Bigger Picture: Latent Factor Models; 1.8 Further Reading; 2 DATA, SPARSITY, AND REGULARIZATION; 2.1 Data Matrix: Examples; 2.2 Shrinking the Sample Covariance Matrix; 2.3 Distribution of the Sample Eigenvalues 2.4 Regularizing Covariances Like a Mean2.5 The Lasso Regression; 2.6 Lasso: Variable Selection and Prediction; 2.7 Lasso: Degrees of Freedom and BIC; 2.8 Some Alternatives to the Lasso Penalty; 3 COVARIANCE MATRICES; 3.1 Definition and Basic Properties; 3.2 The Spectral Decomposition; 3.3 Structured Covariance Matrices; 3.4 Functions of a Covariance Matrix; 3.5 PCA: The Maximum Variance Property; 3.6 Modified Cholesky Decomposition; 3.7 Latent Factor Models; 3.8 GLM for Covariance Matrices; 3.9 GLM via the Cholesky Decomposition; 3.10 GLM for Incomplete Longitudinal Data

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Sommario/riassunto

"Focusing on methodology and computation more than on theorems and proofs, this book provides computationally feasible and statistically efficient methods for estimating sparse and large covariance matrices of high-dimensional data. Extensive in breadth and scope, it features ample applications to a number of applied areas, including business and economics, computer science, engineering, and financial mathematics; recognizes the important and significant contributions of longitudinal and spatial data; and includes various computer codes in R throughout the text and on an author-maintained web site"--
"The aim of this book is to provide computationally feasible and statistically efficient methods for estimating sparse and large covariance matrices of high-dimensional data"--