| 1. | Record Nr.              | UNINA9910300113303321   |
|----|-------------------------|---|
|    | Autore                  | Fourdrinier Dominique   |
|    | Titolo                  | Shrinkage Estimation / / by Dominique Fourdrinier, William E.<br>Strawderman, Martin T. Wells   |
|    | Pubbl/distr/stampa      | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018   |
|    | ISBN                    | 3-030-02185-8   |
|    | Edizione                | [1st ed. 2018.]   |
|    | Descrizione fisica      | 1 online resource (333 pages)   |
|    | Collana                 | Springer Series in Statistics, , 0172-7397  |
|    | Disciplina              | 519.544   |
|    | Soggetti                | Statistics  |
|    |                         | Statistical Theory and Methods  |
|    |                         | Bayesian Inference  |
|    | Lingua di pubblicazione | Inglese   |
|    | Formato                 | Materiale a stampa  |
|    | Livello bibliografico   | Monografia  |
|    | Nota di contenuto       | Chapter 1. Decision Theory Preliminaries Chapter 2. Estimation of a<br>normal mean vector I Chapter 3. Estimation of a normal mean vector<br>II Chapter 4. Spherically symmetric distributions Chapter 5.<br>Estimation of a mean vector for spherically symmetric distributions I:<br>known scale Chapter 6. Estimation of a mean vector for spherically<br>symmetric distributions II: with a residual Chapter 7. Restricted<br>Parameter Spaces Chapter 8. Loss and Confidence Level Estimation  |
|    | Sommario/riassunto      | This book provides a coherent framework for understanding shrinkage<br>estimation in statistics. The term refers to modifying a classical<br>estimator by moving it closer to a target which could be known a priori<br>or arise from a model. The goal is to construct estimators with<br>improved statistical properties. The book focuses primarily on point<br>and loss estimation of the mean vector of multivariate normal and<br>spherically symmetric distributions. Chapter 1 reviews the statistical<br>and decision theoretic terminology and results that will be used<br>throughout the book. Chapter 2 is concerned with estimating the mean<br>vector of a multivariate normal distribution under quadratic loss from a<br>frequentist perspective. In Chapter 3 the authors take a Bayesian view<br>of shrinkage estimation in the normal setting. Chapter 4 introduces the<br>general classes of spherically and elliptically symmetric distributions. |

Point and loss estimation for these broad classes are studied in subsequent chapters. In particular, Chapter 5 extends many of the results from Chapters 2 and 3 to spherically and elliptically symmetric distributions. Chapter 6 considers the general linear model with spherically symmetric error distributions when a residual vector is available. Chapter 7 then considers the problem of estimating a location vector which is constrained to lie in a convex set. Much of the chapter is devoted to one of two types of constraint sets, balls and polyhedral cones. In Chapter 8 the authors focus on loss estimation and data-dependent evidence reports. Appendices cover a number of technical topics including weakly differentiable functions; examples where Stein's identity doesn't hold; Stein's lemma and Stokes' theorem for smooth boundaries; harmonic, superharmonic and subharmonic functions; and modified Bessel functions.