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| Nota di contenuto | Hilbert Space Methods in Probability and Statistical Inference; Contents; Preface; 1. Introduction; 1.1 Objectives of the Book; 1.2 The Role of Projection; 1.3 Overview of the Book; 2. Hilbert Spaces; 2.1 Vector Spaces; 2.2 Hilbert Spaces; 2.3 The Hilbert Space L2; 2.4 Projection and the Riesz Representation; 2.5 Tensor Products; 2.6 Notes; Problems; 3. Probability Theory; 3.1 Probability Hilbert Spaces; 3.2 Probability Subspaces and Independence; 3.3 Conditional Expectation; 3.4 Sample Spaces; 3.5 Notes; Problems; 4. Estimating Functions<br>4.1 Unbiased Estimators and Linear Estimating Functions4.2 Spaces of Estimating Functions; 4.3 Local Subspaces; 4.4 Projection and E-Rao-Blackwellization; 4.5 Roots of Estimating Functions; 4.6 Subspaces and Relative E-Sufficiency; 4.7 The Standard Product Model; 4.8 Correcting for Curvature; 4.9 Exponential Families and Quasiexponential Families; 4.10 Notes; Problems; 5. Orthogonality and Nuisance Parameters; 5.1 |

Introduction; 5.2 Parameter Orthogonality; 5.3 Reducing Sensitivity Using Projection; 5.4 Location and Scale Models; 5.5 Partial Ancillarity and Partial Sufficiency; 5.6 Notes
Problems6. Martingale Estimating Functions and Projected Likelihood; 6.1 Introduction; 6.2 Discrete Time Martingales and Products; 6.3 Martingale Estimating Functions; 6.4 Quasilikelihood and Projected Likelihood; 6.5 Comparing Quasilikelihood, Product Likelihood, and Empirical Likelihood; 6.6 The Projected Likelihood in the General Case; 6.7 An Application to Stable Laws; 6.8 Notes; Problems; 7. Stochastic Integration and Product Integrals; 7.1 Continuous Time Martingales; 7.2 Predictable Processes; 7.3 Introduction to Stochastic Integrals; 7.4 The Stochastic Integral and the Linear Isometry
7.5 The Doob-Meyer Decomposition and the Predictable Variation Process7.6 Semimartingales; 7.7 Product Integrals; 7.8 Notes; Problems; 8. Estimating Functions and the Product Integral Likelihood for Continuous Time Stochastic Processes; 8.1 Introduction; 8.2 Continuous Time Martingale Estimating Functions; 8.3 A Product Integral Form for the Likelihood; 8.4 The Projected Likelihood in the General Case; 8.5 Reproducing Kernel Hubert Spaces; 8.6 Linear Estimating Functions; 8.7 Notes; Problems; 9. Hilbert Spaces and Spline Density Estimation; 9.1 Histograms and Histofunctions; 9.2 Histosplines
9.3 Some Variational Issues9.4 Bandwidth Selection; 9.5 Applications to Stock Market Data; 9.6 Notes; Problems; Bibliography; Index

Sommario/riassunto

Explains how Hilbert space techniques cross the boundaries into the foundations of probability and statistics. Focuses on the theory of martingales stochastic integration, interpolation and density estimation. Includes a copious amount of problems and examples.