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<<数理统计(第2版)>>

图书基本信息

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前言

This book is intended for a course entitled Mathematical Statistics offered at the Department of Statistics , University of Wisconsin. Madison. This course, taught in a mathematically rigorous fashion, covers essential materials in statistical theory that a first or second year graduate student typicallY needs to learn as preparation for work on a Ph. D. degree in statistics. The course is designed for two 15-week semesters. with three lecture hours and two discussion hours in each week. Students in this course are assumed to have a good knowledge of advanced calgulus. A course in real analy. sis or measure theory prior to this course is often recommended. Chapter 1 provides a quick overview of important concepts and results in measure-theoretic probability theory that are used as tools in mathematical statistics. Chapter 2 introduces some fundamental concepts in statistics, including statistical models. the principle of SUfIlciency in data reduction, and two statistical approaches adopted throughout the book： statistical decision theory and statistical inference.

Each of Chapters 3 through 7 provides a detailed study of an important topic in statistical decision theory and inference：Chapter 3 introduces the theory of unbiased estimation；Chapter 4 studies theory and methods in point estimation ander parametric models；Chapter 5 covers point estimation in nonparametric settings ；Chapter 6 focuses on hypothesis testing；and Chapter 7 discusses interval estimation and confidence sets. The classical frequentist approach is adopted in this book. although the Bayesian approach is also introduced (§2. 3 . 2, §4. 1, §6. 4. 4, and §7. 1. 3). Asymptotic(1arge sample)theory, a crucial part of statistical inference, is studied throughout the book, rather than in a separate chapter. About 85%of the book covers classical results in statistical theory that are typically found in textbooks of a similar level. These materials are in the Statistics Department ’S Ph. D. qualifying examination syllabus.

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内容概要

Probability Theory、Probability Spaces and Random Elements、σ－fields and measures、Measurable functions and distributions、Integration and Differentiation、Integration、Radon.Nikodym derivative、Distributions and Their Characteristics、Distributions and probability densities、Moments and moment inequalities、Moment generating and characteristic functions、onditional Expectations、Conditional expectations、Independence、Conditional distributions、Markov chains and martingales、Asymptotic Theory、Convergence modes and stochastic orders等等。

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