

Probability Theory

This volume presents topics in probability theory covered during a first-year graduate course given at the Courant Institute of Mathematical Sciences. The necessary background material in measure theory is developed, including the standard topics, such as extension theorem, construction of measures, integration, product spaces, Radon-Nikodym theorem, and conditional expectation. In the first part of the book, characteristic functions are introduced, followed by the study of weak convergence of probability distributions. Then both the weak and strong limit theorems for sums of independent random variables are proved, including the weak and strong laws of large numbers, central limit theorems, laws of the iterated logarithm, and the Kolmogorov three series theorem. The first part concludes with infinitely divisible distributions and limit theorems for sums of uniformly infinitesimal independent random variables. The second part of the book mainly deals with dependent random variables, particularly martingales and Markov chains. Topics include standard results regarding discrete parameter martingales and Doob's inequalities. The standard topics in Markov chains are treated, i.e., transience, and null and positive recurrence. A varied collection of examples is given to demonstrate the connection between martingales and Markov chains. Additional topics covered in the book include stationary Gaussian processes, ergodic theorems, dynamic programming, optimal stopping, and filtering. A large number of examples and exercises is included. The book is a suitable text for a first-year graduate course in probability.



38,50 €

35,98 € (zzgl. MwSt.)

Nicht mehr lieferbar

Artikelnummer: 9780821828526

Medium: Buch

ISBN: 978-0-8218-2852-6

Verlag: American Mathematical Society

Erscheinungstermin: 30.09.2001

Sprache(n): Englisch

Auflage: Erscheinungsjahr 2001

Produktform: Kartoniert

Gewicht: 355 g

Seiten: 167

Format (B x H): 179 x 256 mm

