

Asymptotic Stochastics

An Introduction with a View towards Statistics

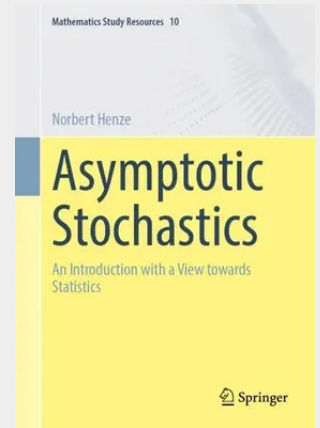
This textbook, which is based on the second edition of a book that has been previously published in German language, provides a comprehension-oriented introduction to asymptotic stochastics. It is aimed at the beginning of a master's degree course in mathematics and covers the material that can be taught in a four-hour lecture with two-hour exercises. Individual chapters are also suitable for seminars at the end of a bachelor's degree course.

In addition to more basic topics such as the method of moments in connection with the convergence in distribution or the multivariate central limit theorem and the delta method, the book covers limit theorems for U-statistics, the Wiener process and Donsker's theorem, as well as the Brownian bridge, with applications to statistics. It concludes with a central limit theorem for triangular arrays of Hilbert space-valued random elements with applications to weighted L^2 statistics.

The book is deliberately designed for self-study. It contains 138 self-questions, which are answered at the end of each chapter, as well as 194 exercises with solutions.

This book is a translation of an original German edition. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation.

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