
1036.60002**Borovkov, K.****Elements of stochastic modeling.** (English)

River Edge, NJ: World Scientific. xiii, 342 p. \$ 48.00 £33.00 (2003). [ISBN 981-238-301-8/pbk]

The author is a well-known probabilist and now he is showing that he is also an excellent writer of a book for university students. In brief, in this book we find carefully selected topics from the area of stochastic modelling all presented in a master way. A large number of facts and results are given with their proofs, in more complex cases the ideas and techniques are well described with indicated suitable references. However, in all the cases attractive and detailed examples, including some counterexamples, are provided as illustrations.

Let us list the chapters: 1. Introduction. 2. Basics of probability theory. 3. Markov chains. 4. Markov decision processes. 5. The exponential distribution and Poisson processes. 6. Jump Markov processes. 7. Elements of queueing theory. 8. Elements of renewal theory. 9. Elements of time series. 10. Elements of simulation.

Each chapter consists of sections, and always the last two ones are Recommended literature and Problems. At the end of the book the reader will find the answers to all problems, as well as a list of the used abbreviations and an index. The author has included a large number of various footnotes, some of them explain notions and facts from analysis and algebra, others are mini-biographies of mathematicians who have made a contribution in the area of stochastics and whose names are cited in the text. This reviewer find all this not only relevant, but also very refreshing and keeping the reader in a good spirit when using the book.

My prediction is that many university teachers will find the book as a valuable up-to-date text for courses in modern stochastics and its applications, perhaps combining with other nice sources. In particular, this reviewer is already using this book for two of his courses, namely Applied probability (at stage 2) and Stochastic processes (at stage 4), both taught at the University of Newcastle, U.K. This book should be considered as a very welcome addition to the collection of any university library. It is very likely that it will be added to the bookshelf of every modern probabilist.

Jordan M. Stoyanov (Newcastle upon Tyne)*Classification :*

*60-02 Research monographs (probability theory)

Cited in ...