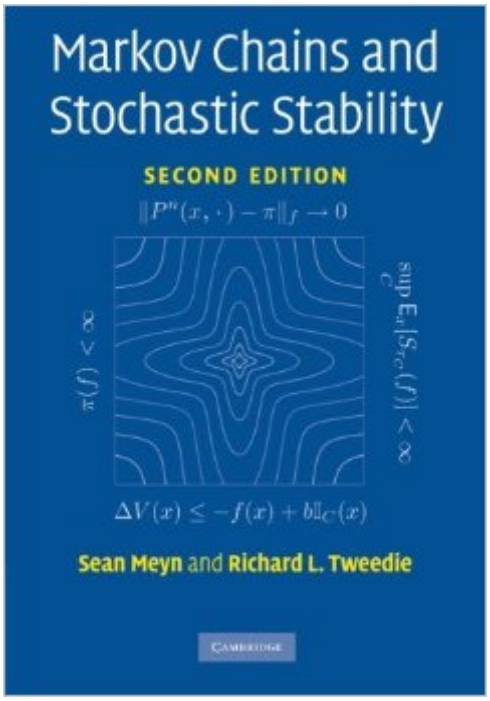
Markov Chains And Stochastic Stability (Cambridge Mathematical Library)



Synopsis

Meyn and Tweedie is back! The bible on Markov chains in general state spaces has been brought up to date to reflect developments in the field since 1996 - many of them sparked by publication of the first edition. The pursuit of more efficient simulation algorithms for complex Markovian models, or algorithms for computation of optimal policies for controlled Markov models, has opened new directions for research on Markov chains. As a result, new applications have emerged across a wide range of topics including optimisation, statistics, and economics. New commentary and an epilogue by Sean Meyn summarise recent developments and references have been fully updated. This second edition reflects the same discipline and style that marked out the original and helped it to become a classic: proofs are rigorous and concise, the range of applications is broad and knowledgeable, and key ideas are accessible to practitioners with limited mathematical background.

Book Information

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Customer Reviews

It is certainly great news for researchers working with Markov chains that this widely used book got reprinted with a new publisher. The content is almost the same as the first version, except for some notes and bibilographic updates by the second author and a nice foreward by Peter Glynn. Of course, sadly the first author is no longer with us today, and the second author has done a good job of putting a modern touch to the book. I think Markov chain theory is still of interest today for at least two reasons. First, Markov models seem to have more and more applications everyday, from

modern cummunication networks to molecular biological data analysis, and so it pays to have a grasp and some understanding of the basic properties of concrete models, whether being stable, or being sensitive to parameter perturbations. This book provides a good introduction and foundation for understanding stochastic dynamical systems. Secondly, there is an intrinsic need in statistical theory for Markov chain model, as it is perhaps the simplest and most natural model for dependence in data, generalizing standard evolution equations such as ODE or PDE models in the sciences literature. For example, both time series analysis and Bayesian statistical computation make heavy use of Markov chain theory. I think this book should be taught at the graduate level at most major statistics departments. This book makes an interesting comparison to another classic book on this subject: E. Nummelin's bookGeneral Irreducible Markov Chains and Non-Negative Operators (Cambridge Tracts in Mathematics) which is, often, overlooked and under-appreciated.

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