Título:

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Complex ideas are presented in an informal way, while maintaining mathematical rigor
Emphasis is on historically neglected generating functions
Key ideas are demonstrated by Monte Carlo simulation done with modern computer algebra systems, followed by visual presentation of results
The book presents an introduction to Stochastic Processes including Markov Chains, Birth and Death processes, Brownian motion and Autoregressive models. The emphasis is on simplifying both the underlying mathematics and the conceptual understanding of random processes. In particular, non-trivial computations are delegated to a computer-algebra system, specifically Maple (although other systems can be easily substituted). Moreover, great care is taken to properly introduce the required mathematical tools (such as difference equations and generating functions) so that even students with only a basic mathematical background will find the book self-contained. Many detailed examples are given throughout the text to facilitate and reinforce learning.

Jan Vrbik has been a Professor of Mathematics and Statistics at Brock University in St Catharines, Ontario, Canada, since 1982.

Paul Vrbik is currently a PhD candidate in Computer Science at the University of Western Ontario in London, Ontario, Canada.

Content Level » Upper undergraduate

Keywords » Autoregressive model - Brownian Motion - Markov chain - Stochastic process

Related subjects » Applications - Computational Statistics - Probability Theory and Stochastic Processes