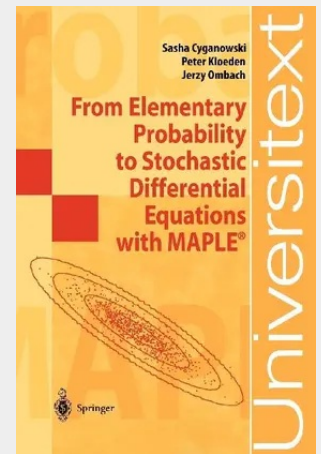


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Measure and integration were once considered, especially by many of the more practically inclined, to be an esoteric area of abstract mathematics best left to pure mathematicians. However, it has become increasingly obvious in recent years that this area is now an indispensable, even unavoidable, language and provides a fundamental methodology for modern probability theory, stochastic analysis and their applications, especially in financial mathematics. Our aim in writing this book is to provide a smooth and fast introduction to the language and basic results of modern probability theory and stochastic differential equations with help of the computer manipulator software package MAPLE. It is intended for advanced undergraduate students or graduates, not necessarily in mathematics, to provide an overview and intuitive background for more advanced studies as well as some practical skills in the use of MAPLE software in the context of probability and its applications. This book is not a conventional mathematics book. Like such books it provides precise definitions and mathematical statements, particularly those based on measure and integration theory, but instead of mathematical proofs it uses numerous MAPLE experiments and examples to help the reader understand intuitively the ideas under discussion. The pace increases from extensive and detailed explanations in the first chapters to a more advanced presentation in the latter part of the book. The MAPLE is handled in a similar way, at first with simple commands, then some simple procedures are gradually developed and, finally, the stochastic package is introduced.

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