

<<随机分析基础>>

图书基本信息

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## 前言

Ten years ago I would not have dared to write a book like this : a non-rigorous treatment of a mathematician theory. I admit that I would have been ashamed , and I am afraid that most of my colleagues in mathematics still think like this. However , my experience with students and practitioners convinced me that there is a strong demand for popular mathematics. I started writing this book as lecture notes in 1992 when I prepared a course on stochastic calculus for the students of the Commerce Faculty at Victoria University Wellington ( New Zealand ). Since I had failed in giving tutorials on portfolio theory and investment analysis. I was expected to teach something I knew better. At that time staff members of economics and mathematics departments already discussed the use of the Black and Scholes option pricing formula ; courses on stochastic finance were offered at leading institutions such as ETH Zurich, Columbia and Stanford ; and there was a general agreement that not only students and staff members of economics and mathematics departments, but also practitioners in financial institutions should know more about this new topic. Soon I realized that there was not very much literature which could be used for teaching stochastic calculus at a rather elementary level. I am fully aware of the fact that a combination of “ elementary ” and “ stochastic calculus ” is a contradiction in itself. Stochastic calculus requires advanced mathematical techniques ; this theory cannot be fully understood if one does not know about the basics of measure theory , functional analysis and the theory of stochastic processes. However, I strongly believe that an interested person who knows about elementary probability theory and who can handle the rules of integration and differentiation is able to understand the main ideas of stochastic calculus. This is supported by my experience which I gained in courses for economics statistics and mathematics students at VUW Wellington and the Department of Mathematics in Groningen. I got the same impression as a lecturer of crash courses on stochastic calculus at the Summer School.

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## 内容概要

I knew better. At that time, staff members of economics and mathematics departments already discussed the use of the Black and Scholes option pricing formula ; courses on stochastic finance were offered at leading institutions such as ETH Zurich, Columbia and Stanford ; and there was a general agreement that not only students and staff members of economics and mathematics departments, but also practitioners in financial institutions should know more about this new topic. Soon I realized that there was not very much literature which could be used for teaching stochastic calculus at a rather elementary level. I am fully aware of the fact that a combination of “ elementary ” and “ stochastic calculus ” is a contradiction in itself. Stochastic calculus requires advanced mathematical techniques ; this theory cannot be fully understood if one does not know about the basics of measure theory , functional analysis and the theory of stochastic processes. However, I strongly believe that an interested person who knows about elementary probability theory and who can handle the rules of integration and differentiation is able to understand the main ideas of stochastic calculus. This is supported by my experience which I gained in courses for economics statistics and mathematics students at VUW Wellington and the Department of Mathematics in Groningen. I got the same impression as a lecturer of crash courses on stochastic calculus at the Summer School.

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