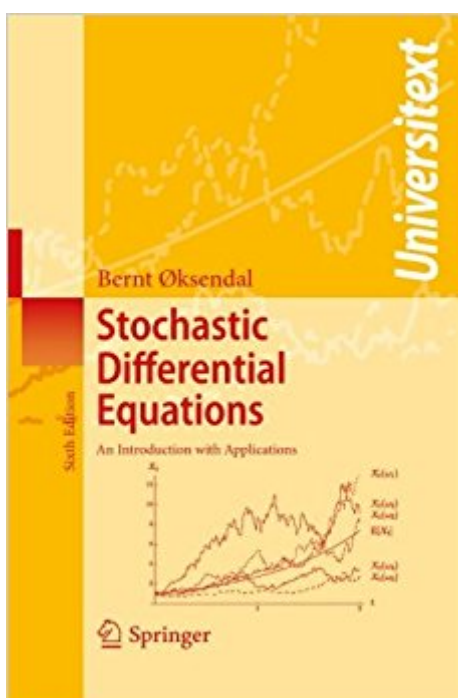The book was found

Stochastic Differential Equations: An Introduction With Applications (Universitext)

Synopsis

This book gives an introduction to the basic theory of stochastic calculus and its applications. Examples are given throughout the text, in order to motivate and illustrate the theory and show its importance for many applications in e.g. economics, biology and physics. The basic idea of the presentation is to start from some basic results (without proofs) of the easier cases and develop the theory from there, and to concentrate on the proofs of the easier case (which nevertheless are often sufficiently general for many purposes) in order to be able to reach quickly the parts of the theory which is most important for the applications. For the 6th edition the author has added further exercises and, for the first time, solutions to many of the exercises are provided. This corrected 6th printing of the 6th edition contains additional corrections and useful improvements, based in part on helpful comments from the readers.

Book Information

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Customer Reviews

From the reviews of the fifth edition: "This is a highly readable and refreshingly rigorous introduction to stochastic calculus. Ã¢â ¬Â¦ This is not a watered-down treatment. It is a serious introduction that starts with fundamental measure-theoretic concepts and ends, coincidentally, with the Black-Scholes formula as one of several examples of applications. This is the best single resource for learning the stochastic calculus Ã¢â ¬Â¦ ." (riskbook.com, 2002) From the reviews of the sixth edition: "The book Ã¢â ¬Â¦ has evolved from a 200-page typewritten booklet to a modern classic. Part of its charm and success is the fact that the author does not bother too much with the (for the

novice) cumbersome rigorous theory Ã¢â ¬Â| . This does not mean that the book is not rigorous, it is just the timing and dosage of mathematical rigour Ã¢â ¬Â| that is palatable for undergraduates Ã¢â ¬Â| . a highly readable account, suitable for self-study and for use in the classroom." (RenÃƒÂ© L. Schilling, The Mathematical Gazette, March, 2005) "This is the sixth edition of the classical and excellent book on stochastic differential equations. The main difference with the next to last edition is the addition of detailed solutions of selected exercises Ã¢â ¬Â| . This is certainly an excellent idea in view to test its ability of applications of the concepts Ã¢â ¬Â| . certainly one of the best books on the subject, it will be very helpful to any graduate students and also very valuable for any analysts of financial market." (StÃƒÂ©phane MÃƒÂ©tens, Physicalia, Vol. 26 (1), 2004) "This is now the sixth edition of the excellent book on stochastic differential equations and related topics. Ã¢â ¬Â| the presentation is successfully balanced between being easily accessible for a broad audience and being mathematically rigorous. The book is a first choice for courses at graduate level in applied stochastic differential equations. The inclusion of detailed solutions to many of the exercises in this edition also makes it very useful for self-study." (Evelyn Buckwar, Zentralblatt MATH, Vol. 1025, 2003)

Oksendal suffers from measurement theory minuatae in order to make this a rigourous text. Frustatingly the author has economised in proofs, leaving out the 'unnecessary' intermediate steps etc wasting a lot of your time to reconstruct. If you've never seen an SDE before, read Elementary Stochastic Equations by Miksovich before attempting this 'Introduction' - really an intermediate text. I really didn't like this book, more could be done to make it comprehensible with less reader effort.

This book is offers an excellent introduction to SDE but limiting the text to integration w.r.t Brownian motion.The book is structured by first introducing 6 problems which are solved using the concepts and theory discussed in the chapters that follow. This is an excellent pedagogical tool, that is used to focus the mind on applications, in order to understand the abstract concepts discussed.The level of mathematics is moderate in difficulty with some proofs omitted (but with references included) for the sake of not veering away too far from the main concepts (and the need to introduce further preliminaries to understand the proof).There are also exercises included (with some solutions and hints) that allows the reader to solidify the understanding and applications.The follow-up text is commonly the Karatzas and Shreve book,though its level of difficulty is substantially higher than this text.

From the cover, one can infer that this book means business. Some books still try to be artistic to attract audiences, whereas this book does away with a creative cover altogether. How often do you see that a book's cover contains five sample paths of a geometric Brownian Motion? Inside, Oksendal writes very clearly and uses the same format throughout. Although the topic is not the easiest to understand, you can acquire the skills that would allow you to gain sufficient knowledge of stochastic differential equations. He starts off with a good introduction and then moves on to the main topics. His applications to finance are also very useful for those in the field. A word of caution is that you would need a decent background in mathematics to read this book, but it is easier than Shreve or Karatzas and Shreve.

If you aren't a bit of a Math wonk, this book can be a bit daunting. But it is worth wading through the Math if you want to understand the "WHY" behind all those formulas and results. If you are looking for a gentler introduction and the "real formulas" Quants use, check out Paul Wilmott's books.The text generally starts with an intuitive example for the chapter and then starts methodically working through the underlying mathematics to get to the meaty results. The exercises are worth the effort as they reinforce the chapter work and offer additional insights.

The title says it all. It is an excellent book for beginners to get in to stochastic calculus. A small suggestion that you revise your ODE before you tackle this book as it will ease the references the author likes to make to ODE.

Oksendal's book is well written and covers a lot of material.No surprise it's a standard reference in SDE classes.

The book makes us understand the actual importance of the probability.Today the books about the stochastic equations have superated the interest of the traditional analysis.The author explicates with competence the definition of the martingale, filter or Markov chain. The applications are about the finance, the control theory, the problem of stopping.

A classic. Written with an advanced reader in mind, this book covers most topics of stochastic calculus in great detail and with sufficient clarity. Worked examples are very helpful. Unless your (graduate) degree included coursework in stochastic calculus, it is not easy reading. Definitely read it with pen and paper, otherwise a lot of the material will not sink in.

Stochastic Differential Equations: An Introduction with Applications (Universitext) [Differential Equations, Dynamical Systems, and an Introduction to Chaos [DIFFERENTIAL EQUATIONS, DYNAMICAL SYSTEMS, AND AN INTRODUCTION TO CHAOS BY Hirsch, Morris W. (Author) Mar-26-2012] By Hirsch, Morris W. (Author) [2012) [Paperback] Differential Equations and Boundary Value Problems: Computing and Modeling (5th Edition) (Edwards/Penney/Calvis Differential Equations) Fundamentals of Differential Equations (8th Edition) (Featured Titles for Differential Equations) Differential Equations: Computing and Modeling (5th Edition) (Edwards/Penney/Calvis Differential Equations) Applied Partial Differential Equations with Fourier Series and Boundary Value Problems (5th Edition) (Featured Titles for Partial Differential Equations) Student Solutions Manual to accompany Boyce Elementary Differential Equations 10e & Elementary Differential Equations with Boundary Value Problems 10e Student's Solutions Manual for Fundamentals of Differential Equations 8e and Fundamentals of Differential Equations and Boundary Value Problems 6e Numerical Treatment of Partial Differential Equations (Universitext) Functional Analysis, Sobolev Spaces and Partial Differential Equations (Universitext) Continuous-time Stochastic Control and Optimization with Financial Applications (Stochastic Modelling and Applied Probability) Differential Forms and Applications (Universitext) Numerical Partial Differential Equations: Conservation Laws and Elliptic Equations (Texts in Applied Mathematics) (v. 33) Partial Differential Equations of Mathematical Physics and Integral Equations (Dover Books on Mathematics) Differential Equations and Their Applications: An Introduction to Applied Mathematics (Texts in Applied Mathematics) (v. 11) Differential Equations: An Introduction to Modern Methods and Applications Differential Equations: An Introduction to Modern Methods and Applications, 3rd Edition An Introduction to Differential Equations and Their Applications (Dover Books on Mathematics) Stochastic Simulation: Algorithms and Analysis (Stochastic Modelling and Applied Probability, No. 57) (No. 100) A First Course in Differential Equations with Modeling Applications

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