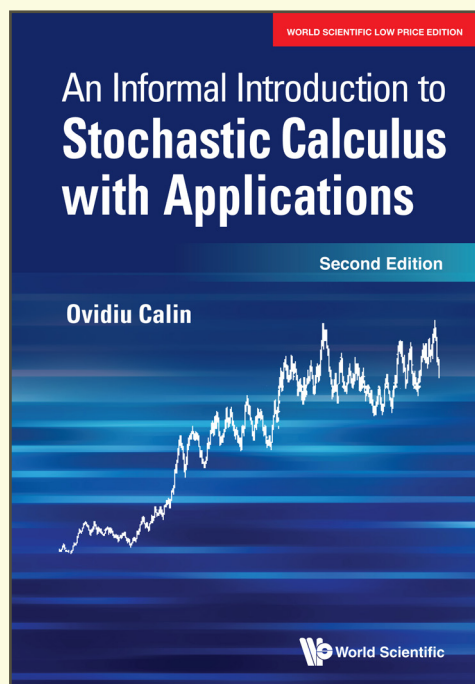


AN INFORMAL INTRODUCTION TO STOCHASTIC CALCULUS WITH APPLICATIONS, 2nd Edition



By **Ovidiu Calin**
(*Eastern Michigan University, USA*)

ISBN	9781944660277
Extent	512pp
Binding	Paperback
Year	2022
Price	Rs. 2095

ABOUT THE BOOK

Most branches of science involving random fluctuations can be approached by Stochastic Calculus. These include, but are not limited to, signal processing, noise filtering, stochastic control, optimal stopping, electrical circuits, financial markets, molecular chemistry, population dynamics, etc. All these applications assume a strong mathematical background, which in general takes a long time to develop. Stochastic Calculus is not an easy to grasp theory, and in general, requires acquaintance with the probability, analysis and measure theory.

The goal of this book is to present Stochastic Calculus at an introductory level and not at its maximum mathematical detail. The author's goal was to capture as much as possible the spirit of elementary deterministic Calculus, at which students have been already exposed. This assumes a presentation that mimics similar properties of deterministic Calculus, which facilitates understanding of more complicated topics of Stochastic Calculus.

The second edition contains several new features that improved the first edition both qualitatively and quantitatively. First, two more chapters have been added, Chapter 12 and Chapter 13, dealing with applications of stochastic processes in Electrochemistry and global optimization methods.

This edition contains also a final chapter material containing fully solved review problems and provides solutions, or at least valuable hints, to all proposed problems. The present edition contains a total of about 250 exercises.

This edition has also improved presentation from the first edition in several chapters, including new material.

READERSHIP

Advanced undergraduate and graduate level students in Science, Economics, and Business. It can be used by researchers and practitioners in both academia and industry.

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