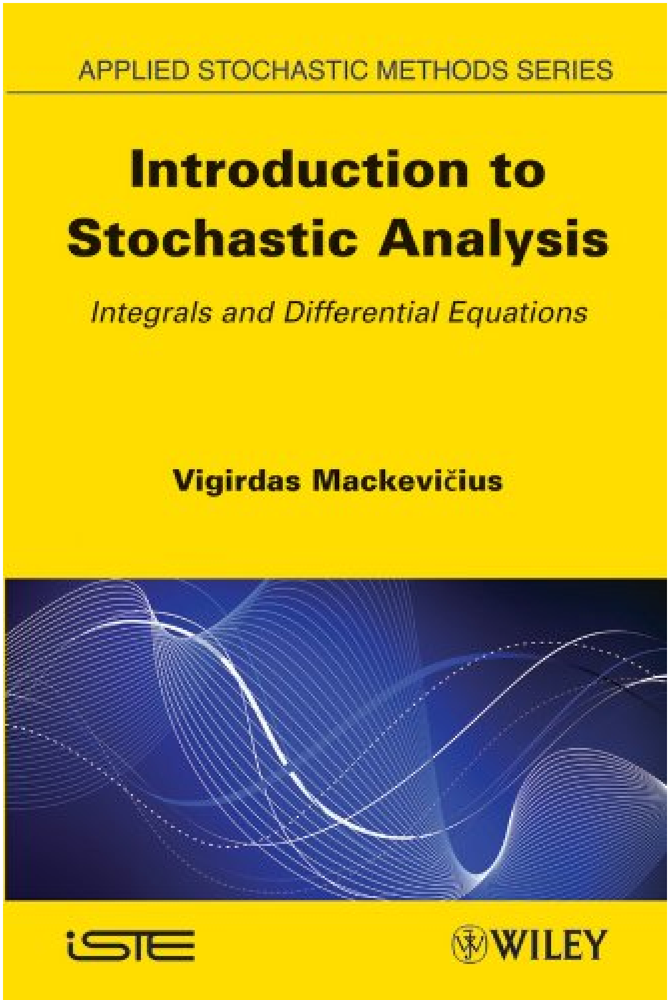
Introduction to Stochastic Analysis: Integrals and Differential Equations (Applied Stochastic Methods) PDF



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Introduction to Stochastic Analysis: Integrals and Differential Equations (Applied Stochastic Methods) by Vigirdas Mackevicius ISBN 1848213115

This is an introduction to stochastic integration and stochastic differential equations written in an understandable way for a wide audience, from students of mathematics to practitioners in biology, chemistry, physics, and finances. The presentation is based on the naïve stochastic integration, rather than on abstract theories of measure and stochastic processes. The proofs are rather simple for practitioners and, at the same time, rather rigorous for mathematicians. Detailed application examples in natural sciences and finance are presented. Much attention is paid to simulation diffusion processes.

The topics covered include Brownian motion; motivation of stochastic models with Brownian motion; Itô and Stratonovich stochastic integrals, Itô’s formula; stochastic differential equations (SDEs); solutions of SDEs as Markov processes; application examples in physical sciences and finance; simulation of solutions of SDEs (strong and weak approximations). Exercises with hints and/or solutions are also provided.

Introduction to Stochastic Analysis: Integrals and Differential Equations (Applied Stochastic Methods) Review

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