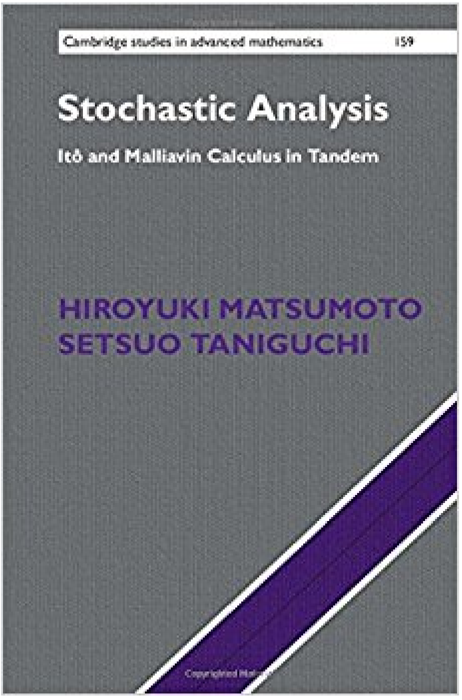
Stochastic Analysis: ItÃ´ And Malliavin Calculus In Tandem (Cambridge Studies In Advanced Mathematics)



Synopsis

Thanks to the driving forces of the ItÃ´ calculus and the Malliavin calculus, stochastic analysis has expanded into numerous fields including partial differential equations, physics, and mathematical finance. This book is a compact, graduate-level text that develops the two calculi in tandem, laying out a balanced toolbox for researchers and students in mathematics and mathematical finance. The book explores foundations and applications of the two calculi, including stochastic integrals and differential equations, and the distribution theory on Wiener space developed by the Japanese school of probability. Uniquely, the book then delves into the possibilities that arise by using the two flavors of calculus together. Taking a distinctive, path-space-oriented approach, this book crystallizes modern day stochastic analysis into a single volume.

Book Information

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Customer Reviews

"This book is a comprehensive guide to stochastic analysis related to Brownian motion. It contains the basis of the ItÃ´ calculus and the Malliavin calculus, which are the heart of the modern analysis of Brownian motion. The book is self-contained and it is accessible for graduate students and researchers who wish to learn about stochastic differential equations." Hiroshi Kunita"A very readable text on stochastic integrals and differential equations for novices to the area, including a substantial chapter on analysis on Wiener space and Malliavin calculus. TheÂ many examples and applications included, such as Schilder's theorem, Ramer's theorem, semi-classical limits, quadratic

Wiener functionals, andÂ rough paths, give additional value." David Elworthy, University of Warwick"This book develops stochastic analysis from the path space point of view, with an emphasis on the connection between Brownian motion and partial differential equations. A detailed treatment of Malliavin calculus and important applications in finance and physics make this monograph an innovative and useful reference in the field." David Nualart, University of Kansas

This compact, graduate-level text develops the ItÃ´ calculus and the Malliavin calculus in tandem, laying out a balanced toolbox for researchers and students in mathematics and mathematical finance, and taking readers from foundations to current, groundbreaking applications.

I've seen clearer approaches. Or maybe the stylistic choices of the authors do not match my personal preferences.

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