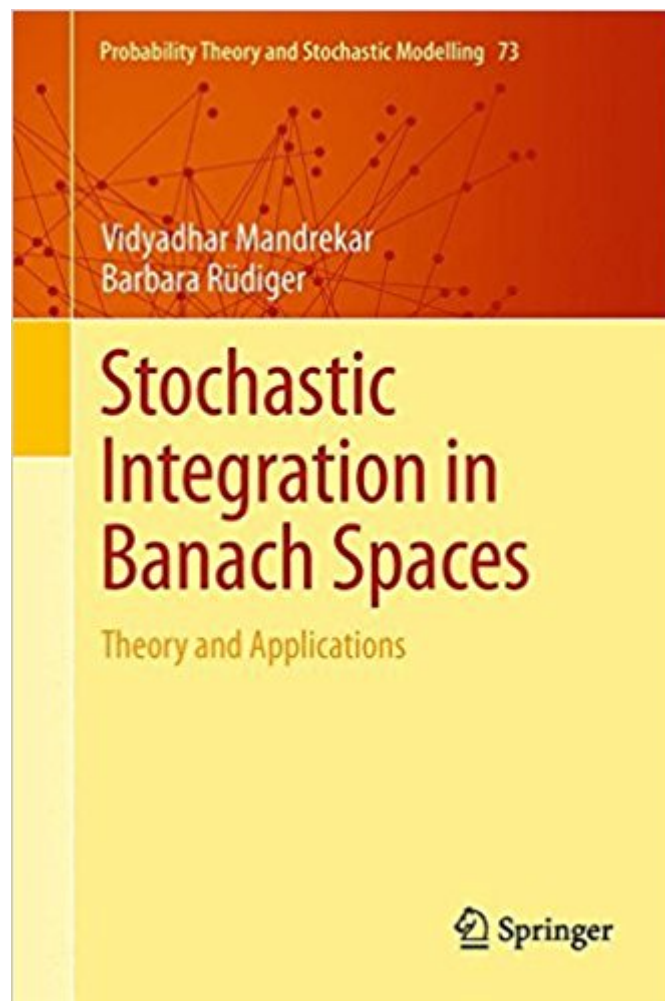# Stochastic Integration In Banach Spaces: Theory And Applications (Probability Theory And Stochastic Modelling)

Synopsis

Considering Poisson random measures as the driving sources for stochastic (partial) differential equations allows us to incorporate jumps and to model sudden, unexpected phenomena. By using such equations the present book introduces a new method for modeling the states of complex systems perturbed by random sources over time, such as interest rates in financial markets or temperature distributions in a specific region. It studies properties of the solutions of the stochastic equations, observing the long-term behavior and the sensitivity of the solutions to changes in the initial data. The authors consider an integration theory of measurable and adapted processes in appropriate Banach spaces as well as the non-Gaussian case, whereas most of the literature only focuses on predictable settings in Hilbert spaces.Â The book is intended for graduate students and researchers in stochastic (partial) differential equations, mathematical finance and non-linear filtering and assumes a knowledge of the required integration theory, existence and uniqueness results and stability theory. The results will be of particular interest to natural scientists and the finance community. Readers should ideally be familiar with stochastic processes and probability theory in general, as well as functional analysis and in particular the theory of operator semigroups. â ‹

Book Information

Stochastic Integration in Banach Spaces: Theory and Applications (Probability Theory and

Stochastic Modelling) Introduction to Stochastic Integration (Probability and Its Applications) Elementary Stochastic Calculus With Finance in View (Advanced Series on Statistical Science & Applied Probability, Vol 6) (Advanced Series on Statistical Science and Applied Probability) Engineering Uncertainty and Risk Analysis, Second Edition: A Balanced Approach to Probability, Statistics, Stochastic Models, and Stochastic Differential Equations Introduction to Banach Spaces and their Geometry (North-Holland Mathematics Studies) (Volume 68) Convexity and Optimization in Banach Spaces (Springer Monographs in Mathematics) Classical Banach Spaces (Lecture Notes in Mathematics) 3D Printing: The Ultimate 3D Printing Guide! (3D Printers, 3D Modelling, 3D Plotting) (3D Printing, 3D Printers, 3D Modelling, 3D Plotting) Modelling the T-55 Main Battle Tank (Osprey Modelling) Lectures on BSDEs, Stochastic Control, and Stochastic Differential Games with Financial Applications (SIAM Series on Financial Mathematics) Enterprise Integration: An Architecture for Enterprise Application and Systems Integration An Introduction to Banach Space Theory (Graduate Texts in Mathematics) Concepts in Probability and Stochastic Modeling (An Alexander Kugushev Book) Probability, Random Variables and Stochastic Processes The Theory of Probability: Explorations and Applications Low-Dimensional and Nanostructured Materials and Devices: Properties, Synthesis, Characterization, Modelling and Applications (NanoScience and Technology) Metamaterials and Plasmonics: Fundamentals, Modelling, Applications (NATO Science for Peace and Security Series B: Physics and Biophysics) Molecular Modelling: Principles and Applications (2nd Edition) Stochastic Models, Information Theory, and Lie Groups, Volume 2: Analytic Methods and Modern Applications (Applied and Numerical Harmonic Analysis) Stochastic Processes: Theory for Applications