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(Eds.)

Festschrift in Celebration of Prof. Dr. Wilfried Grecksch's 60th Birthday

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Summary
Festschrift in Celebration of Prof. Dr. Wilfried Grecksch's 60th Birthday

This book is dedicated to Prof. Dr. Wilfried Grecksch on the occasion of his 60th birthday. The papers in this book are related to modern and interesting fields of stochastics.

V.V. Anh and J. Yong study some boundary value problems and optimal control of stochastic Volterra integral equations (SVIE) in Hilbert spaces. The well-posedness of backward SVIEs and the duality between linear forward and linear backward SVIEs are investigated. The existence of optimal controls and necessary conditions of Pontryagin type, which involve the duality established, are discussed.
In the article by *T. Caraballo, P.E. Kloeden, A. Neuenkirch and R. Pavani* a survey on synchronization of dissipative systems under noise is given. Synchronization of dissipatively coupled system is obtained in the case of additive noise, and also in the case of linear noise, if the driving noises are the same. Moreover, synchronization of dissipative systems with additive noise also persists under discretization, when the drift-implicit Euler scheme is used to discretize the system.
In the paper by *Andreas Hamel and Birgit Rudloff* definitions and conditions for a set-valued measure of risk to have "finite values" are given. Moreover, continuity properties for convex and non-convex risk measures are investigated. As an example, set-valued variants of Value at Risk are considered.
David Julitz investigates a stochastic Lorenz system given by a stochastic differential equation. This equation generates a random dynamical system which possesses a global random attractor. The existence of this attractor can be ensured with a standard conjugation method. The author approximates the bifurcation behavior with particular numerical methods.
The objective of the paper by *David Julitz and Christian Roth* is to give a representation of a solution of an operator-valued quasilinear stochastic partial differential equation driven by a fractional Brownian motion with values in a Hilbert Space, whereby the covariance operator is a kernel operator. The fractional white noise framework is used to represent the solution as a Wick product between a fractional Wick exponential and the solution of a pathwise deterministic parabolic partial differential equation.
In the paper by *Hannelore Lisei* the existence of at least two distinct nontrivial solutions for a nonlinear equation involving a Dirichlet form is shown. Suitable compact embedding results and a critical point theorem of B. Ricceri are used.
Birgit Rudloff, Jörn Sass and Ralf Wunderlich consider the optimal selection of portfolios for utility maximizing investors under joint budget and risk constraints. The risk is measured in terms of entropic risk which is a convex risk measure. Stock returns satisfy a stochastic differential equation where partial information on the drift is supposed. Under general conditions on the corresponding drift process the optimal trading strategy is provided using Malliavin calculus.
Björn Schmalfuß uses the transform method to show that stochastic partial differential equations driven by a fractional Brownian motion form a random dynamical system. For this random dynamical system he proves the existence of a random attractor.
One main issue in the paper by *Hans-Jörg Starkloff* is the representation of random variables by a set of independent random variables with specific distributions, e.g., Gaussian variables. The article addresses the question how many such variables are needed and what kind of distributions can be generated in such a way. It is shown, that allowing arbitrary measurable transformations, usually one can generate the needed random variables with the help of only one random variable with continuous distribution function, e.g., one standard Gaussian random variable.
The prediction formula is derived in the paper by *Constantin Tudor* for a sub-fractional Brownian motion. Also, the optimal mean-square estimate is obtained for the linear filtering problem with a sub-fractional Brownian motion in the signal and the noise in the observation process being a linear combination of independent Brownian motion and sub-fractional Brownian motion.
Universal confidence sets for solutions of optimization problems are sequences of random sets $(C_n)_{n \in N}$ with the property that for each sample size n the set C_n covers the true solution at least with a prescribed probability. Universal confidence sets can be derived making use of uniform concentration-of-measure results for sequences of random functions and knowledge about the limit problem, e.g. a growth condition. *Silvia Vogel* presents sufficient conditions for the convergence assumptions and shows how estimates for the growth function can be included.