

Contents

Part I Random motions

Random Walks in Nonhomogeneous Poisson Environment	3
Youri Davydov and Valentin Konakov	
Random Motions with Space-Varying Velocities	25
Roberto Garra and Enzo Orsingher	

Part II Parametrix and Heat Kernel Estimates

Parametrix Methods for One-Dimensional Reflected SDEs	43
Aurélien Alfonsi, Masafumi Hayashi and Arturo Kohatsu-Higa	
Harnack Inequalities and Bounds for Densities of Stochastic Processes	67
Gennaro Cibelli and Sergio Polidoro	

Part III Local Limit Theorems

A Survey on Conditioned Limit Theorems for Products of Random Matrices and Affine Random Walks	93
Ion Grama	
Bounds in the Local Limit Theorem for a Random Walk Conditioned to Stay Positive	103
Ion Grama and Émile Le Page	

Part IV Approximation of Stochastic Processes

Regression-Based Variance Reduction Approach for Strong Approximation Schemes	131
Denis Belomestny, Stefan Häfner and Mikhail Urusov	

Quadratic Approximation for Log-Likelihood Ratio Processes	179
Alexander Gushchin and Esko Valkeila	

Part V Fractional Brownian Motion

Noise Sensitivity of Functionals of Fractional Brownian Motion Driven Stochastic Differential Equations: Results and Perspectives	219
Alexandre Richard and Denis Talay	

Drift Parameter Estimation in the Models Involving Fractional Brownian Motion	237
Yuliya Mishura and Kostiantyn Ralchenko	

Part VI Particle Systems

Convergence to Equilibrium for Many Particle Systems	271
Alexander Lykov and Vadim Malyshev	

Large Deviations for the Rightmost Position in a Branching Brownian Motion	303
Bernard Derrida and Zhan Shi	

Part VII Statistics

Bounds on the Prediction Error of Penalized Least Squares Estimators with Convex Penalty	315
Pierre Bellec and Alexandre Tsybakov	

Structured Nonparametric Curve Estimation	335
Enno Mammen	

Part VIII Acturial Science

New Research Directions in Modern Actuarial Sciences	349
Ekaterina Bulinskaya	

Part IX Population Dynamics

Population Processes with Immigration	411
Dan Han, Stanislav Molchanov and Joseph Whitmeyer	

Spatial Models of Population Processes	435
Stanislav Molchanov and Joseph Whitmeyer	

Part X Ergodic Markov Processes**Ergodic Markov Processes and Poisson Equations (Lecture Notes) . . . 457**

Alexander Veretennikov

Modern Problems of Stochastic Analysis and Statistics

Selected Contributions In Honor of Valentin Konakov

Panov, V. (Ed.)

2017, XII, 511 p. 15 illus., 8 illus. in color., Hardcover

ISBN: 978-3-319-65312-9