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Nota di contenuto	Preface; Contents; 1. Background Material; 1.1 Introduction; 1.2 Wiener Process and Wiener Measure; 1.3 Stochastic Differential Equations in \mathbb{R}^d ; 1.4 Stochastic Differential Equations in H ; 1.4.1 Measure Solutions; 1.5 Nonlinear Filtering; 1.5.1 Finite Dimensional Filtering; 1.5.2 Infinite Dimensional Filtering; 1.6 Elements of Vector Measures; 1.7 Some Problems for Exercise; 2. Regular Functionals of Brownian Motion; 2.1 Introduction; 2.2 Functionals of Scalar Brownian Motion; 2.3 Functionals of Vector Brownian Motion; 2.4 Functionals of Gaussian Random Field (GRF) 5.6 Some Problems for Exercise 6. Lp-Based Generalized Functionals of White Noise III; 6.1 Introduction; 6.2 Homogeneous Functionals of Degree n ; 6.3 Nonhomogeneous Functionals; 6.4 Weighted Generalized Functionals; 6.5 Some Examples Related to Section 6.4; 6.6 Generalized Functionals of Random Fields Applied; 6.7 F_q -Valued Vector Measures with Application; 6.8 Some Problems for Exercise; 7. $W_{p,m}$ -Based Generalized Functionals of White Noise IV; 7.1 Introduction; 7.2 Homogeneous Functionals; 7.3 Nonhomogeneous Functionals; 7.4 Inductive and Projective Limits

8.7.2 Smoothness under Hörmander's Conditions

Sommario/riassunto

This invaluable research monograph presents a unified and fascinating theory of generalized functionals of Brownian motion and other fundamental processes such as fractional Brownian motion and Levy process - covering the classical Wiener-Ito class including the generalized functionals of Hida as special cases, among others. It presents a thorough and comprehensive treatment of the Wiener-Sobolev spaces and their duals, as well as Malliavin calculus with their applications. The presentation is lucid and logical, and is based on a solid foundation of analysis and topology. The monograph develop