STOCHASTIC ANALYSIS ON INFINITE DIMENSIONAL SPACES pdf

1: Stochastic process - Wikipedia

AN INFINITE DIMENSIONAL STOCHASTIC ANALYSIS APPROACH TO LOCAL VOLATILITY DYNAMIC MODELS RENE CARMONA AND SERGEY NADTOCHIYÂ´ Abstract. The diï¬cult problem of the characterization of arbitrage free.*

A Primer of Nonlinear Analy sis. Hamilton-Jacobi Equations in Hilbert Spaces. Some applications in Malliavin calculus. Regularity results for infinite dimensional diffusions. A Malliavin calculus approach. Second-order Hamilton-Jacobi equations in infinite dimensions. Direct solution of a second-order Hamilton-Jacobi equations in Hilbert spaces. Da Prato and L. On partial sup-convolutions, a lemma of P. Lions and viscosity solutions in Hilbert spaces. Stochastic equations in infinite dimensions. In Ency clopedia of Mathematics and Its Applications Ergodicity for Infinite-Dimensional Sy stems. Backward stochastic differential equations a general introduction. El Karoui and L. Controlled Markov Processes and Viscosity Solutions. Smoothing properties of transition semigroups in Hilbert spaces. MR Digital Object Identifier: Second order Hamilton-Jacobi equations in Hilbert spaces and stochastic control: Regularity of solutions of second order Hamilton-Jacobi equations and application to a control problem. Partial Differential Equations 20 Global regular solutions of second order Hamilton-Jacobi equations in Hilbert spaces with locally Lipschitz nonlinearities. Second order Hamilton-Jacobi equations in Hilbert spaces and stochastic boundary control. Second order unbounded parabolic equations in separated form. Geometric Theory of Semilinear Parabolic Equations. Lecture Notes in Math. Adapted solution of a backward semilinear stochastic evolution equation. Stochastic evolution equations with random generators. Viscosity solutions of fully nonlinear second-order equations and optimal stochastic control in infinite dimensions. The case of bounded stochastic evolutions. Viscosity solutions of fully nonlinear second order equations and optimal stochastic control in infinite dimensions. Uniqueness of viscosity solutions for general second-order equations. Adapted solution of a degenerate backward SPDE with applications. Stochastic PDEs and term structure models. The Malliavin calculus and related topics. In Probability and Its Applications. Stochastic calculus with anticipative integrands. Theory Related Fields 78 In Stochastic Analy sis and Related Topics: The Geilo Workshop L. Adapted solution of a backward stochastic differential equation. Sy stems and Control Lett. Backward stochastic differential equations and quasilinear parabolic partial differential equations. Lecture Notes in Control Inf. Lp-analysis of finite and infinite dimensional diffusion operators. Viscosity solutions of fully nonlinear partial differential equations with "unbounded" terms in infinite dimensions. Partial Differential Equations 19 Existence, uniqueness and space regularity of the adapted solutions of a backward SPDE. Parabolic equations on Hilbert spaces. Stochastic invariance and consistency of financial models.

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2: NSF Award Search: Award# - Stochastic analysis and related topics

Stochastic analysis related to Lie groups: stochastic analysis of loop spaces and infinite dimensional manifolds has been developed rapidly after the fundamental works of Gross and Malliavin. (Lectures by Driver, Gross, Mitoma, and Sengupta.).

In particular, this research will provide a better understanding of Gaussian-type measures on infinite-dimensional curved spaces. The proposed research is motivated by physics. For example, infinite-dimensional spaces such as loop groups and path spaces appear in quantum field theory QFT. The PI proposes to formalize and study some of the notions used in physics, such as measures on certain infinite-dimensional spaces. For example, it is common to see computations in QFT literature involving integrals over infinite-dimensional spaces with respect to a fictitious infinite-dimensional Lebesgue measure with a Gaussian density normalized by a constant which is infinite. Mathematically this measure can be interpreted as a Wiener measure on a flat space, or as a heat kernel measure on an infinite-dimensional curved space. In addition, this research will connect diverse fields: This project is focused on elliptic and subelliptic diffusions in infinite-dimensional curved spaces, such as infinite-dimensional groups, loop groups and path spaces. The questions of existence and uniqueness of solutions of the SDEs and smoothness of solutions will be studied. In general these infinite-dimensional spaces do not have an analogue of the Lebesgue measure or a Haar measure in the group case. In addition, geometry of these spaces will be studied in connection with smoothness properties of heat kernel measures in both elliptic Riemannian and subelliptic sub-Riemannian settings. The smoothness is interpreted as a Cameron-Martin type quasi-invariance. It is an interesting question in itself, and in addition it can give rise to unitary representations of the infinite-dimensional groups. One part of the proposal is devoted to studying of Brownian and energy representations of path groups. In addition, smoothness of finite-dimensional hypo-elliptic heat kernels will be studied. This project will use new techniques coming from harmonic analysis on such spaces. The educational component of the proposal is manifold: When clicking on a Digital Object Identifier DOI number, you will be taken to an external site maintained by the publisher. Some full text articles may not yet be available without a charge during the embargo administrative interval. Some links on this page may take you to non-federal websites. Their policies may differ from this site. Maria Gordina, Thomas Laetsch. Please report errors in award information by writing to:

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3: Foundations of Stochastic Differential Equations in Infinite Dimensional Spaces - SIAM Bookstore

Get this from a library! Stochastic analysis on infinite dimensional spaces: proceedings of the U.S.-Japan bilateral seminar, January , Baton Rouge, Louisiana.

For recent publications, see MathSciNet. Integration theory on infinite dimensional manifolds; Trans. Stochastic integrals in abstract Wiener space; Pacific J. Diffusion and Brownian motion on infinite dimensional manifolds; Trans. Piech Stochastic integral and parabolic equation in abstract Wiener space; Bull. Absolute continuity of measures corresponding to diffusion processes in Banach space; Annals of Probability 1 6. Differential and Stochastic equations in abstract Wiener space; J. Functional Analysis 12 7. On operator-valued stochastic integrals; Bull. Stochastic integrals in abstract Wiener space II: Regularity properties; Nagoya Math. On stochastic maximum principle in Banach space; J. Functional Analysis 14 The Morse-Palais lemma on Banach spaces; Bull. Integration by parts for abstract Wiener measures; Duke Math. Differentiable measures; Chinese J. Academia Sinica 3 On a conjecture of Gross; Proc. On Gross differentiation on Banach spaces; Pacific J. Potential theory associated with Uhlenbeck-Ornstein process; J. Functional Analysis 21 Distribution theory on Banach space; Lecture Notes in Math. Differential calculus for measures on Banach spaces; Lecture Notes in Math. Uhlenbeck-Ornstein process on a Riemann-Wiener manifold; in: Stochastic Differential Equations, K. An example of quasi-invariant cylindrical measure; Z. Wahrscheinlichkeitstheorie 46 The chain rule for differentiable measures; Studia Math. On integral contractors; J. Integral Equations 1 Integration in Banach spaces; in: Notes in Banach Spaces, H. Smolenski On admissible shifts of generalized white noises; J. Multivariate Analysis 12 On Fourier transform of generalized Brownian functionals; J. A Fourier transform characterization of Gaussian Brownian functionals; Bull. Academia Sinica 11 Brownian functionals and applications; Acta Applicandae Mathematicae 1 Fourier-Mehler transforms of generalized Brownian functionals; Proc. Japan Academy 59A The heat equation and the Fourier transform of generalized Brownian functionals; Lecture Notes in Math. Russek White noise approach to stochastic integration; J. Multivariate Analysis 24 Brownian motion, diffusions and infinite dimensional calculus; Lecture Notes in Math. White noise calculus; in: Algebra, Analysis and Geometry, M. Stochastic partial differential equations of generalized Brownian functionals; Lecture Notes in Math. The Fourier transform in white noise calculus; J. Multivariate Analysis 31 Sun Absolute value of white noise as a generalized Brownian functional; Soochow J. Math 15 Functional Analysis 94 Potthoff Anticipating stochastic differential equations; in: Probability Theory and Math. Potthoff Anticipating stochastic integrals and stochastic differential equations; in: Streit A characterization of white noise test functionals; Nagoya Math. Fourier-Mehler transforms in white noise analysis; in: Lectures on white noise analysis; Proc. Gaussian Random Fields, T. Lectures on white noise analysis; Soochow J. Hida Semigroups associated with generalized Brownian functionals; Semigroup Forum 45 Yan Continuity of affine transformations of white noise test functionals and applications; Stochastic Processes and Their Applications 43 Obata Transformations for white noise functionals; J. Functional Analysis Kubo Fourier transform and cylindrical Hida distributions; in: Stochastic Processes, a Festschrift in Honor of G. Analysis of white noise functionals; Soochow J. White noise analysis; in: Workshops in Pure Math. Kubo Finite dimensional Hida distributions; J. An infinite dimensional Fourier transform; in: Kubo Simple proof of Hida distribution characterization theorem; in: Japan Academy 72A A characterization of Hida measures; in: Stochastic Processes and Functional Analysis, J. Stochastic integration via white noise analysis; Nonlinear Analysis, Theory, Methods, and Applications 30 Xiong Stochastic differential equations in white noise space; Infinite Dimensional Analysis, Quantum Probability, and Related Topics 1 Kubo Characterization of Hida measures in white noise analysis; in: Stochastic in Finite and Infinite Dimensions, in honor of G. Kubo CKS-space in terms of growth functions; in: Quantum Information II, T. Growth functions in white noise theory; Soochow J. Kubo Characterization of test functions in CKS-space; in: Mathematical Physics and Stochastic Analysis: Essays in Honor of Ludwig Streit, A. Kubo Bell numbers, log-concavity, and log-convexity; Acta Applicandae Mathematicae 63 Kubo Roles of log-concavity, log-convexity, and growth order in white noise analysis; Infinite Dimensional Analysis,

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Quantum Probability, and Related Topics 4 Kubo General characterization theorems and intrinsic topologies in white noise analysis; Hiroshima Math. Growth functions for generalized functions on white noise space; in: Boukas On the unitarity of stochastic evolutions driven by the square of white noise; Infinite Dimensional Analysis, Quantum Probability, and Related Topics 4 Hazewinkle Managing editor , Kluwer Academic Publishers, White noise theory; in: Handbook of Stochastic Analysis and Applications D. A quarter century of white noise theory; in: Quantum Information IV, T. Stan A Hausdorff-Young inequality for white noise analysis; in: Kubo Segal-Bargmann transforms of one-mode interacting Fock spaces associated with Gaussian and Poisson measures; Proc. Kubo Gaussian and Poisson white noises with related characterization theorems; in: Kubo Multiplicative renormalization and generating functions I.

4: Hui-Hsiung Kuo - Research Papers

knowledge of infinite dimensional analysis including linear operators on Hilbert spaces, Fock spaces, count ably normed spaces, nuclear spaces and their dual spaces, Borel measures on topological linear spaces which are the base of other.

5: Stochastic Analysis and Applications

Included is a discussion of Schwartz spaces of distributions in relation to probability theory and infinite dimensional stochastic analysis, as well as the random variables and stochastic processes that take values in infinite dimensional spaces.

6: Stochastic Analysis - IchirÅ• Shigekawa - Google Books

A systematic, self-contained treatment of the theory of stochastic differential equations in infinite dimensional spaces. Included is a discussion of Schwartz spaces of distributions in relation to probability theory and infinite dimensional stochastic analysis, as well as the random variables and stochastic processes that take values in infinite dimensional spaces.

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