

1. Record Nr.	UNINA9910299785003321
Titolo	Stochastic Analysis: A Series of Lectures : Centre Interfacultaire Bernoulli, January–June 2012, Ecole Polytechnique Fédérale de Lausanne, Switzerland / / edited by Robert C. Dalang, Marco Dozzi, Franco Flandoli, Francesco Russo
Pubbl/distr/stampa	Basel : , : Springer Basel : , : Imprint : Birkhäuser, , 2015
ISBN	3-0348-0909-3
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (402 p.)
Collana	Progress in Probability, , 2297-0428 ; ; 68
Disciplina	519.2 519.22
Soggetti	Probabilities Differential equations Mathematics Probability Theory Differential Equations Applications of Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Preface -- List of participants -- S. Albeverio and S. Mazzucchi: An introduction to infinite dimensional oscillatory and probabilistic integrals -- M. Arnaudon and A.B. Cruzeiro: Stochastic Lagrangian flows and the Navier-Stokes equations -- V. Bally: Integration by parts formulas and regularity of probability laws -- V. Barbu: Stochastic porous media equations -- H. Bessaih: Stochastic incompressible Euler equations in a two-dimensional domain -- Z. Brzezniak and M. Ondreját: Stochastic geometric wave equations -- K. Burdzy: Reflections on reflections -- F. Flandoli: A stochastic view over the open problem of well-posed ness for the 3D Navier-Stokes equations -- A. Kohatsu-Higa: A short course on weak approximations for Lévy driven SDE's -- C. Mueller: Stochastic PDE from the point of view of particle systems and duality -- J. van Neerven, M. Veraar and L. Weis: Stochastic integration in Banach spaces – a survey -- S. Peszat: Stochastic partial differential equations with Lévy noise (a few aspects)

-- J.C. Zambrini: The research program of stochastic deformation (with a view toward geometric mechanics).

Sommario/riassunto

This book presents in thirteen refereed survey articles an overview of modern activity in stochastic analysis, written by leading international experts. The topics addressed include stochastic fluid dynamics and regularization by noise of deterministic dynamical systems; stochastic partial differential equations driven by Gaussian or Lévy noise, including the relationship between parabolic equations and particle systems, and wave equations in a geometric framework; Malliavin calculus and applications to stochastic numerics; stochastic integration in Banach spaces; porous media-type equations; stochastic deformations of classical mechanics and Feynman integrals and stochastic differential equations with reflection. The articles are based on short courses given at the Centre Interfacultaire Bernoulli of the Ecole Polytechnique Fédérale de Lausanne, Switzerland, from January to June 2012. They offer a valuable resource not only for specialists, but also for other researchers and Ph.D. students in the fields of stochastic analysis and mathematical physics. Contributors: S. Albeverio M. Arnaudon V. Bally V. Barbu H. Bessaih Z. Brzniak K. Burdzy A.B. Cruzeiro F. Flandoli A. Kohatsu-Higa S. Mazzucchi C. Mueller J. van Neerven M. Ondreját S. Peszat M. Veraar L. Weis J.-C. Zambrini.