1. Record Nr. UNISA996466625903316

Autore	Prevot Claudia
Titolo	A concise course on stochastic partial differential equations / / Claudia Prevot, Michael Rockner
Pubbl/distr/stampa	Berlin, Germany ; ; New York, New York : , : Springer, , [2007] ©2007
ISBN	1-280-90216-7 9786610902163 3-540-70781-6
Edizione	[1st ed. 2007.]
Descrizione fisica	1 online resource (148 p.)
Collana	Lecture Notes in Mathematics, , 0075-8434 ; ; 1905
Disciplina	519.2
Soggetti	Stochastic differential equations
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 (p. 137-139) and index.
Nota di contenuto	Motivation, Aims and Examples -- Stochastic Integral in Hilbert spaces -- Stochastic Differential Equations in Finite Dimensions -- A Class of Stochastic Differential Equations in Banach Spaces -- Appendices: The Bochner Integral -- Nuclear and Hilbert-Schmidt Operators -- Pseudo Invers of Linear Operators -- Some Tools from Real Martingale Theory -- Weak and Strong Solutions: the Yamada-Watanabe Theorem -- Strong, Mild and Weak Solutions.
Sommario/riassunto	These lectures concentrate on (nonlinear) stochastic partial differential equations (SPDE) of evolutionary type. All kinds of dynamics with stochastic influence in nature or man-made complex systems can be modelled by such equations. To keep the technicalities minimal we confine ourselves to the case where the noise term is given by a stochastic integral w.r.t. a cylindrical Wiener process.But all results can be easily generalized to SPDE with more general noises such as, for instance, stochastic integral w.r.t. a continuous local martingale. There are basically three approaches to analyze SPDE: the "martingale measure approach", the "mild solution approach" and the "variational approach". The purpose of these notes is to give a concise and as self-contained as possible an introduction to the "variational approach". A large part of necessary background material, such as definitions and

results from the theory of Hilbert spaces, are included in appendices.