1. Record Nr. UNINA9910136471503321

| | |
|---|---|
| Autore | Barbu Viorel |
| Titolo | Stochastic Porous Media Equations / / by Viorel Barbu, Giuseppe Da Prato, Michael Röckner |
| Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016 |
| ISBN | 3-319-41069-5 |
| Edizione | [1st ed. 2016.] |
| Descrizione fisica | 1 online resource (IX, 202 p.) |
| Collana | Lecture Notes in Mathematics, , 0075-8434 ; ; 2163 |
| Disciplina | 519.2 |
| Soggetti | Probabilities<br>Partial differential equations<br>Fluids<br>Probability Theory and Stochastic Processes<br>Partial Differential Equations<br>Fluid- and Aerodynamics |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Foreword -- Preface -- Introduction -- Equations with Lipschitz nonlinearities -- Equations with maximal monotone nonlinearities -- Variational approach to stochastic porous media equations -- L1-based approach to existence theory for stochastic porous media equations -- The stochastic porous media equations in Rd -- Transition semigroups and ergodicity of invariant measures -- Kolmogorov equations -- A Two analytical inequalities -- Bibliography -- Glossary -- Translator’s note -- Index. |
| Sommario/riassunto | Focusing on stochastic porous media equations, this book places an emphasis on existence theorems, asymptotic behavior and ergodic properties of the associated transition semigroup. Stochastic perturbations of the porous media equation have reviously been considered by physicists, but rigorous mathematical existence results have only recently been found. The porous media equation models a number of different physical phenomena, including the flow of an ideal gas and the diffusion of a compressible fluid through porous media, and also thermal propagation in plasma and plasma radiation. Another |

important application is to a model of the standard self-organized criticality process, called the "sand-pile model" or the "Bak-Tang-Wiesenfeld model". The book will be of interest to PhD students and researchers in mathematics, physics and biology.