1. Record Nr. UNINA9910299966403321

| | |
|---|---|
| Autore | Lü Qi |
| Titolo | General Pontryagin-Type Stochastic Maximum Principle and Backward Stochastic Evolution Equations in Infinite Dimensions / / by Qi Lü, Xu Zhang |
| Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014 |
| ISBN | 3-319-06632-3 |
| Edizione | [1st ed. 2014.] |
| Descrizione fisica | 1 online resource (148 p.) |
| Collana | SpringerBriefs in Mathematics, , 2191-8201 |
| Disciplina | 519.3 |
| Soggetti | System theory<br>Control theory<br>Mathematical optimization<br>Calculus of variations<br>Probabilities<br>Social sciences—Mathematics<br>Statistics<br>Systems Theory, Control<br>Calculus of Variations and Optimization<br>Probability Theory<br>Mathematics in Business, Economics and Finance |
| 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. |
| Nota di contenuto | Preface; Acknowledgments; Contents; 1 Introduction; 2 Preliminaries; 3 Well-Posedness of the Vector-Valued BSEEs; 4 Well-Posedness Result for the Operator-Valued BSEEs with Special Data; 5 Sequential Banach-Alaoglu-Type Theorems in the Operator Version; 6 Well-Posedness of the Operator-Valued BSEEs in the General Case; 7 Some Properties of the Relaxed Transposition Solutions to the Operator-Valued BSEEs; 8 Necessary Condition for Optimal Controls, the Case of Convex Control Domains; 9 Necessary Condition for Optimal Controls, the Case of Non-convex Control Domains; References |
| Sommario/riassunto | The classical Pontryagin maximum principle (addressed to deterministic |

finite dimensional control systems) is one of the three milestones in modern control theory. The corresponding theory is by now well-developed in the deterministic infinite dimensional setting and for the stochastic differential equations. However, very little is known about the same problem but for controlled stochastic (infinite dimensional) evolution equations when the diffusion term contains the control variables and the control domains are allowed to be non-convex. Indeed, it is one of the longstanding unsolved problems in stochastic control theory to establish the Pontryagintype maximum principle for this kind of general control systems: this book aims to give a solution to this problem. This book will be useful for both beginners and experts who are interested in optimal control theory for stochastic evolution equations.