1. Record Nr. UNINA9910299966403321

Autore	Lu 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 Control theory Mathematical optimization Calculus of variations Probabilities Social sciences—Mathematics Statistics Systems Theory, Control Calculus of Variations and Optimization Probability Theory 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.