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Autore	Ahmed N. U (Nasir Uddin)
Titolo	Optimal Control of Dynamic Systems Driven by Vector Measures : Theory and Applications / / by N. U. Ahmed, Shian Wang
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Soggetti	Differential equations Stochastic processes System theory Control theory Mathematical optimization Calculus of variations Mathematical analysis Differential Equations Stochastic Systems and Control Systems Theory, Control Calculus of Variations and Optimization Analysis
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Nota di contenuto	1 Mathematical Preliminaries -- 2 Linear Systems -- 3 Nonlinear Systems -- 4 Optimal Control: Existence Theory -- Optimal Control: Necessary Conditions of Optimality -- 6 Stochastic Systems Controlled by Vector Measures -- 7 Applications to Physical Examples -- Bibliography -- Index.
Sommario/riassunto	This book is devoted to the development of optimal control theory for finite dimensional systems governed by deterministic and stochastic differential equations driven by vector measures. The book deals with a broad class of controls, including regular controls (vector-valued measurable functions), relaxed controls (measure-valued functions)

and controls determined by vector measures, where both fully and partially observed control problems are considered. In the past few decades, there have been remarkable advances in the field of systems and control theory thanks to the unprecedented interaction between mathematics and the physical and engineering sciences. Recently, optimal control theory for dynamic systems driven by vector measures has attracted increasing interest. This book presents this theory for dynamic systems governed by both ordinary and stochastic differential equations, including extensive results on the existence of optimal controls and necessary conditions for optimality. Computational algorithms are developed based on the optimality conditions, with numerical results presented to demonstrate the applicability of the theoretical results developed in the book. This book will be of interest to researchers in optimal control or applied functional analysis interested in applications of vector measures to control theory, stochastic systems driven by vector measures, and related topics. In particular, this self-contained account can be a starting point for further advances in the theory and applications of dynamic systems driven and controlled by vector measures.