1.	Record Nr.	UNINA9910299764103321
	Autore	Carpentier Pierre
	Titolo	Stochastic Multi-Stage Optimization : At the Crossroads between Discrete Time Stochastic Control and Stochastic Programming / / by Pierre Carpentier, Jean-Philippe Chancelier, Guy Cohen, Michel De Lara
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
	ISBN	3-319-18138-6
	Edizione	[1st ed. 2015.]
	Descrizione fisica	1 online resource (370 p.)
	Collana	Probability Theory and Stochastic Modelling, , 2199-3130 ; ; 75
	Disciplina	003.76
	Soggetti	Mathematical optimization Probabilities Continuous Optimization Probability Theory and Stochastic Processes
	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 and index.
	Nota di contenuto	I Preliminaries -- 1.Issues and Problems in Decision Making under Uncertainty -- 2.Open-Loop Control: The Stochastic Gradient Method -- II Decision under Uncertainty and the Role of Information.- 3.Tools for Information Handling.- 4.Information and Stochastic Optimization Problems.- Optimality Conditions for SOC Problems -- III Discretization and Numerical Methods -- 6.Discretization Methodology for Problems with SIS -- 7.Numerical Algorithms -- IV Convergence Analysis -- 8. Convergence Issues in Stochastic Optimization -- V Advanced Topics -- 9.Multi-Agent Decision Problems -- Dual Effect for Multi-Agent Stochastic I-O Systems -- VI Appendices -- A. Basics in Analysis and Optimization -- B. Basics in Probability -- References -- Index.
	Sommario/riassunto	The focus of the present volume is stochastic optimization of dynamical systems in discrete time where - by concentrating on the role of information regarding optimization problems - it discusses the related discretization issues. There is a growing need to tackle uncertainty in applications of optimization. For example the massive introduction of renewable energies in power systems challenges traditional ways to manage them. This book lays out basic and advanced tools to handle and numerically solve such problems and

thereby is building a bridge between Stochastic Programming and Stochastic Control. It is intended for graduates readers and scholars in optimization or stochastic control, as well as engineers with a background in applied mathematics.