1.	Record Nr.	UNINA9910338249503321
	Autore	Øksendal Bernt
	Titolo	Applied Stochastic Control of Jump Diffusions / / by Bernt Øksendal, Agnès Sulem
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
	ISBN	3-030-02781-3
	Edizione	[3rd ed. 2019.]
	Descrizione fisica	1 online resource (XVI, 436 p. 26 illus., 3 illus. in color.)
	Collana	Universitext, , 0172-5939
	Disciplina	519.2
		629.8312
	Soggetti	Operations research
		Management science
		Probabilities
		Economics, Mathematical
		Calculus of variations
		Operator theory
		System theory
		Operations Research, Management Science
		Probability Theory and Stochastic Processes
		Quantitative Finance
		Calculus of Variations and Optimal Control; Optimization
		Operator Theory
		Systems Theory, Control
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Preface -- Stochastic Calculus with Lévy Processes -- Financial Markets Modelled by Jump Diffusions -- Optimal Stopping of Jump Diffusions -- Backward Stochastic Differential Equations and Risk Measures -- Stochastic Control of Jump Diffusions -- Stochastic Differential Games -- Combined Optimal Stopping and Stochastic Control of Jump Diffusions -- Viscosity Solutions -- Solutions of Selected Exercises -- References -- Notation and Symbols.
	Sommario/riassunto	The main purpose of the book is to give a rigorous introduction to the

most important and useful solution methods of various types of stochastic control problems for jump diffusions and their applications. Both the dynamic programming method and the stochastic maximum principle method are discussed, as well as the relation between them. Corresponding verification theorems involving the Hamilton–Jacobi–Bellman equation and/or (quasi-)variational inequalities are formulated. The text emphasises applications, mostly to finance. All the main results are illustrated by examples and exercises appear at the end of each chapter with complete solutions. This will help the reader understand the theory and see how to apply it. The book assumes some basic knowledge of stochastic analysis, measure theory and partial differential equations. The 3rd edition is an expanded and updated version of the 2nd edition, containing recent developments within stochastic control and its applications. Specifically, there is a new chapter devoted to a comprehensive presentation of financial markets modelled by jump diffusions, and one on backward stochastic differential equations and convex risk measures. Moreover, the authors have expanded the optimal stopping and the stochastic control chapters to include optimal control of mean-field systems and stochastic differential games.