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Titolo	Backward Stochastic Differential Equations with Jumps and Their Actuarial and Financial Applications : BSDEs with Jumps / / by ukasz Delong
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Descrizione fisica	1 online resource (X, 288 p.)
Collana	EAA Series, , 1869-6929
Disciplina	519.2
Soggetti	Economics, Mathematical Actuarial science Mathematical optimization Probabilities Quantitative Finance Actuarial Sciences Continuous Optimization Probability Theory and Stochastic Processes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Nota di contenuto	Introduction -- Stochastic Calculus -- Backward Stochastic Differential Equations – the General Case -- Forward-Backward Stochastic Differential Equations -- Numerical Methods for FBSDEs -- Nonlinear Expectations and g-Expectations -- Combined Financial and Insurance Model -- Linear BSDEs and Predictable Representations of Insurance Payment Processes -- Arbitrage-Free Pricing, Perfect Hedging and Superhedging -- Quadratic Pricing and Hedging -- Utility Maximization and Indifference Pricing and Hedging -- Pricing and Hedging under a Least Favorable Measure -- Dynamic Risk Measures -- Other Classes of BSDEs.
Sommario/riassunto	Backward stochastic differential equations with jumps can be used to solve problems in both finance and insurance. Part I of this book presents the theory of BSDEs with Lipschitz generators driven by a Brownian motion and a compensated random measure, with an emphasis on those generated by step processes and Lévy processes. It

discusses key results and techniques (including numerical algorithms) for BSDEs with jumps and studies filtration-consistent nonlinear expectations and g-expectations. Part I also focuses on the mathematical tools and proofs which are crucial for understanding the theory. Part II investigates actuarial and financial applications of BSDEs with jumps. It considers a general financial and insurance model and deals with pricing and hedging of insurance equity-linked claims and asset-liability management problems. It additionally investigates perfect hedging, superhedging, quadratic optimization, utility maximization, indifference pricing, ambiguity risk minimization, no-good-deal pricing and dynamic risk measures. Part III presents some other useful classes of BSDEs and their applications. This book will make BSDEs more accessible to those who are interested in applying these equations to actuarial and financial problems. It will be beneficial to students and researchers in mathematical finance, risk measures, portfolio optimization as well as actuarial practitioners.
