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Collana	Dynamic Modeling and Econometrics in Economics and Finance, , 1566-0419 ; ; 21
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	Economics, Mathematical
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	Operations research
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I The Fundamentals of Derivative Security Pricing -- 1 The Stock Option Problem -- 2 Stochastic Processes for Asset Price Modelling -- 3 An Initial Attempt at Pricing an Option -- 4 The Stochastic Differential Equation -- 5 Manipulating Stochastic Differential Equations and Stochastic Integrals -- 6 Ito's Lemma and Its Application -- 7 The Continuous Hedging Argument -- 8 Martingale Interpretation of No-Riskless Arbitrage -- 9 The Partial Differential Equation Approach Under Geometric Brownian Motion -- 10 Pricing Derivative Securities -

A General Approach -- 11 Applying the General Pricing Framework -- 12 Jump-Diffusion Processes -- Option Pricing under Jump-Diffusion Processes -- 14 Partial Differential Equation Approach under Geometric Jump-Diffusion Process -- 15 Stochastic Volatility -- 16 Pricing the American Feature -- 17 Pricing Options Using Binominal Trees -- 18 Volatility Smiles -- Part II Interest Rate Modelling -- 19 Allowing for Stochastic Interest Rates in the B-S Model -- 20 Change of Numeraire -- 21 The Paradigm Interest Rate Option Problem -- 22 Modelling Interest Rate Dynamics -- 23 Interest Rate Derivatives - One Factor Spot Rate Models -- 24 Interest Rate Derivatives - Multi-Factor Models -- 25 The Heath-Jarrow-Morton Framework -- 26 The LIBOR Market Model.   .

Sommario/riassunto	The book presents applications of stochastic calculus to derivative security pricing and interest rate modelling. By focusing more on the financial intuition of the applications rather than the mathematical formalities, the book provides the essential knowledge and understanding of fundamental concepts of stochastic finance, and how to implement them to develop pricing models for derivatives as well as to model spot and forward interest rates. Furthermore an extensive overview of the associated literature is presented and its relevance and applicability are discussed. Most of the key concepts are covered including Ito's Lemma, martingales, Girsanov's theorem, Brownian motion, jump processes, stochastic volatility, American feature and binomial trees. The book is beneficial to higher-degree research students, academics and practitioners as it provides the elementary theoretical tools to apply the techniques of stochastic finance in research or industrial problems in the field.