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Forward -- 5.2 Proportional Dividends -- 5.3 Deterministic Dividends -- 5.4 Affine Models -- 5.5 Dividend Discount Models -- 5.6 Stochastic Dividend Yield -- 5.7 Stochastic Hazard And Interest Rates -- 5.8 Variance Swap -- 6 Short Volatility Models -- 6.1 Local Volatility -- 6.2 Stochastic Volatility -- 6.3 Local Stochastic Volatility -- 6.4 Jump Diffusion -- 6.5 Non-Markovian Models -- 6.6 Calibration And Hedging Stochastic Volatility -- 7 Implied Volatility Dynamics -- 7.1 Implied Volatility Delta -- 7.2 Forward Volatility -- 7.3 Modelling Implied Volatility -- 7.4 Discrete Time Models -- 8 Correlation -- 8.1 Implied Correlation -- 8.2 Correlation Term Structure -- 8.3 Decorrelation -- 8.4 Langnau's Local Correlation -- 8.5 Stochastic Correlation -- 9 Copulas -- 9.1 Definition -- 9.2 Dependence Measures -- 9.3 Archimedean Copulas -- 9.4 Marshall-Olkin Copula --9.5 T-Copula -- 9.6 Factor Copula -- 9.7 Convex Combination -- 9.8 Model Independent Arbitrage Bounds -- 9.9 Gauss Copula Model -- 10 Fixed Income -- 10.1 Market -- 10.2 Short Rate -- 10.3 Heath-Jarrow-Morton -- 10.4 Hull-White -- 10.5 Cox-Ingersoll-Ross -- 10.6 Markov Functional -- 11 Equity-Interest Rate Hybrids -- 11.1 Constant Equity Volatility -- 11.2 Gauss Copula -- 11.3 Local Equity Volatility -- 11.4 Stochastic Equity Volatility -- 11.5 Dynamic Hedging Of Variance Swaps -- 12 Credit -- 12.1 Market -- 12.2 Reduced Form Models -- 12.3 Structural Models -- 12.4 Portfolio Credit Derivatives -- 13 Defaultable Equity -- 13.1 Reduced Form Models -- 13.2 Structural Models -- 14 Counterparty Credit Risk -- 14.1 Sources Of Credit Risk -- 14.2 Credit Valuation Adjustment -- 14.3 Wrong Way Risk -- 14.4 Structural Models -- 14.5 Reduced Form Models -- 14.6 Funding Valuation Adjustment -- 15 Foreign Exchange -- 15.1 Cross Currency Basis Swap -- 15.2 Market Smile -- 15.3 Vanna-Volga Approach -- 15.4 Models -- 15.5 Quanto Options -- 15.6 Government Intervention -- 16 Affine Processes -- 16.1 General Framework -- 16.2 European Options And Fourier Transform -- 17 Monte Carlo -- 17.1 Method -- 17.2 Random Numbers -- 17.3 Path Construction For Brownian Motion -- 17.4 Discretization -- 17.5 Greeks -- 17.6 Variance Reduction -- 18 Gauss -- 18.1 Brownian Motion -- 18.2 Black-Scholes -- 18.3 Barrier -- 18.4 Outside Barrier -- 18.5 Useful Integrals -- Notation -- References. Since the development of the Black-Scholes model, research on equity derivatives has evolved rapidly to the point where it is now difficult to cut through the myriad of literature to find relevant material. Written by a quant with many years of experience in the field this book provides an up-to-date account of equity and equity-hybrid (equity-rates, equity-credit, equity-foreign exchange) derivatives modeling from a practitioner's perspective. The content reflects the requirements of practitioners in financial institutions: Quants will find a survey of stateof-the-art models and guidance on how to efficiently implement them with regards to market data representation, calibration, and sensitivity computation. Traders and structurers will learn about structured products, selection of the most appropriate models, as well as efficient hedging methods while risk managers will better understand market, credit, and model risk and find valuable information on advanced correlation concepts. Equity Derivatives and Hybrids provides exhaustive coverage of both market standard and new approaches, including: -Empirical properties of stock returns including autocorrelation and jumps -Dividend discount models -Non-Markovian and discrete-time volatility processes -Correlation skew modeling via copula as well as local and stochastic correlation factors -Hybrid modeling covering local and stochastic processes for interest rate, hazard rate, and volatility as well as closed form solutions -Credit, debt, and funding valuation adjustment (CVA, DVA, FVA) -Monte Carlo

Sommario/riassunto

techniques for sensitivities including algorithmic differentiation, path recycling, as well as multilevel. Written in a highly accessible manner with examples, applications, research, and ideas throughout, this book provides a valuable resource for quantitative-minded practitioners and researchers.