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Titolo	Large Deviations and Asymptotic Methods in Finance // edited by Peter K. Friz, Jim Gatheral, Archil Gulisashvili, Antoine Jacquier, Josef Teichmann
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Nota di contenuto	Hagan, Lesniewski, Woodward: Probability Distribution in the SABR Model of Stochastic Volatility -- Paulot: Asymptotic Implied Volatility at the Second Order with Application to the SABR Model -- Henry-Labordere: Unifying the BGM and SABR Models: A Short Ride in Hyperbolic Geometry -- Ben Arous, Laurence: Second Order Expansion for Implied Volatility in Two Factor Local-stochastic Volatility -- Osajima: General Asymptotics of Wiener Functionals and Application to Implied Volatilities -- Bayer, Laurence: Small-time asymptotics for the at-the-money implied volatility in a multi-dimensional local volatility model -- Keller-Ressel, Teichmann: A Remark on Gatheral's 'Most-likely Path Approximation' of Implied Volatility -- Gatheral, Wang: Implied volatility from local volatility: a path integral approach -- Gerhold, Friz: Don't Stay Local - Extrapolation Analytics for Dupire's Local Volatility -- Gulisashvili, Teichmann: Laplace Principle Expansions

and Short Time Asymptotics for Affine Processes -- Lorig, Pascucci, Pagliarani: Asymptotics for d-dimensional Levy-type Processes -- Takahashi: An Asymptotic Expansion Approach in Finance -- Baudoin, Ouyang: On small time asymptotics for rough differential equations driven by fractional Brownian motions -- Lucic: On singularities in the Heston model.- Bayer, Friz, Laurence: On the probability density function of baskets -- Conforti, De Marco, Deuschel: On small-noise equations with degenerate limiting system arising from volatility models -- Pham: Long time asymptotic problems for optimal investment -- Spiliopoulos: Systemic Risk and Default Clustering for Large Financial Systems -- Jacod, Rosenbaum: Asymptotic Properties of a Volatility Estimator.

Sommario/riassunto

Topics covered in this volume (large deviations, differential geometry, asymptotic expansions, central limit theorems) give a full picture of the current advances in the application of asymptotic methods in mathematical finance, and thereby provide rigorous solutions to important mathematical and financial issues, such as implied volatility asymptotics, local volatility extrapolation, systemic risk and volatility estimation. This volume gathers together ground-breaking results in this field by some of its leading experts. Over the past decade, asymptotic methods have played an increasingly important role in the study of the behaviour of (financial) models. These methods provide a useful alternative to numerical methods in settings where the latter may lose accuracy (in extremes such as small and large strikes, and small maturities), and lead to a clearer understanding of the behaviour of models, and of the influence of parameters on this behaviour. Graduate students, researchers and practitioners will find this book very useful, and the diversity of topics will appeal to people from mathematical finance, probability theory and differential geometry.
