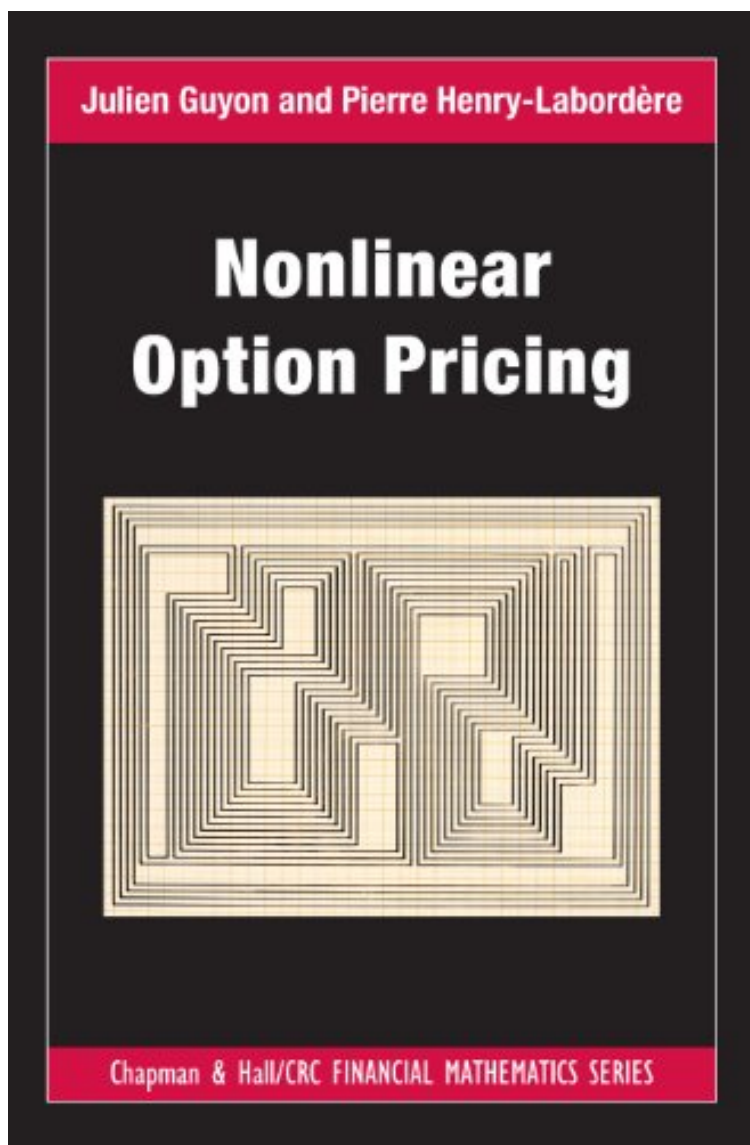


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Nonlinear Option Pricing



Par Julien Guyon, Pierre Henry-Labordère

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numerical implementation. Although the focus is on ideas and numerical examples, the authors introduce relevant mathematical notions and important results and proofs. The book also covers several original approaches, including regression methods and dual methods for pricing chooser options, Monte Carlo approaches for pricing in the uncertain volatility model and the uncertain lapse and mortality model, the Markovian projection method and the particle method for calibrating local stochastic volatility models to market prices of vanilla options with/without stochastic interest rates, the $a + b$ technique for building local correlation models that calibrate to market prices of vanilla options on a basket, and a new stochastic representation of nonlinear PDE solutions based on marked branching diffusions.

New Tools to Solve Your Option Pricing Problems For nonlinear PDEs encountered in quantitative finance, advanced probabilistic methods are needed to address dimensionality issues. Written by two leaders in quantitative research including *Risk* magazine's 2013 Quant of the Year, *Nonlinear Option Pricing* compares various numerical methods for solving high-dimensional nonlinear problems arising in option pricing. Designed for practitioners, it is the first authored book to discuss nonlinear Black-Scholes PDEs and compare the efficiency of many different methods.

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