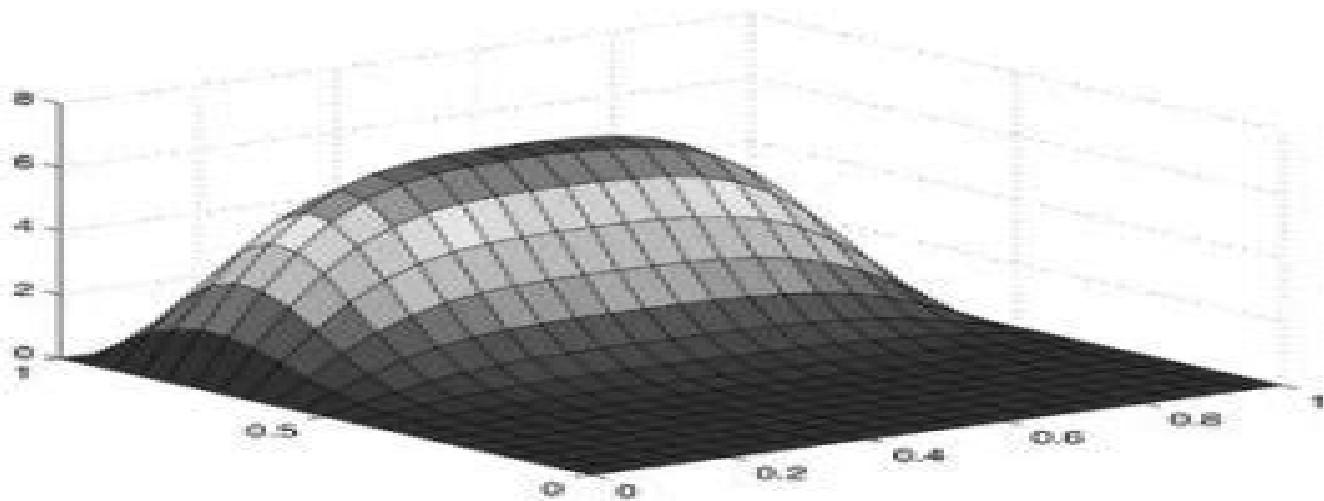


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Moral, Peng Hu, Nadia Oudjane, 2012-03-23 Numerical methods in finance have emerged as a vital field at the crossroads of probability theory finance and numerical analysis Based on presentations given at the workshop Numerical Methods in Finance held at the INRIA Bordeaux France on June 1 2 2010 this book provides an overview of the major new advances in the numerical treatment of instruments with American exercises Naturally it covers the most recent research on the mathematical theory and the practical applications of optimal stopping problems as they relate to financial applications By extension it also provides an original treatment of Monte Carlo methods for the recursive computation of conditional expectations and solutions of BSDEs and generalized multiple optimal stopping problems and their applications to the

valuation of energy derivatives and assets The articles were carefully written in a pedagogical style and a reasonably self contained manner The book is geared toward quantitative analysts probabilists and applied mathematicians interested in financial applications

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Computational Finance George Levy, 2003-12-17 *Computational Finance* presents a modern computational approach to mathematical finance within the Windows environment and contains financial algorithms mathematical proofs and computer code in C C The author illustrates how numeric components can be developed which allow financial routines to be easily called by the complete range of Windows applications such as Excel Borland Delphi Visual Basic and Visual C These components permit software developers to call mathematical finance functions more easily than in corresponding packages Although these packages may offer the advantage of interactive interfaces it is not easy or computationally efficient to call them programmatically as a component of a larger system The components are therefore well suited to software developers

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Miller, 2012-07-15 Presenting state of the art methods in the area the book begins with a presentation of weak discrete time approximations of jump diffusion stochastic differential equations for derivatives pricing and risk measurement Using a moving least squares reconstruction a numerical approach is then developed that allows for the construction of arbitrage free surfaces Free boundary problems are considered next with particular focus on stochastic impulse control problems that arise when the cost of control includes a fixed cost common in financial applications The text proceeds with the development of a fear index based on equity option surfaces allowing for the measurement of overall fear levels in the market The problem of American option pricing is considered next applying simulation methods combined with regression techniques and discussing convergence properties Changing focus to integral transform methods a variety of option pricing problems are considered The COS method is practically applied for the pricing of options under uncertain volatility a method developed by the authors that relies on the dynamic programming principle and Fourier cosine series expansions Efficient approximation methods are next developed for the application of the fast Fourier transform for option pricing under multifactor affine models with stochastic volatility and jumps Following this fast and accurate pricing techniques are showcased for the pricing

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