The Numerical Solution of the American Option Pricing Problem:Finite Difference and Transform Approaches

Carl Chiarella, Boda Kang, Gunter H Meyer
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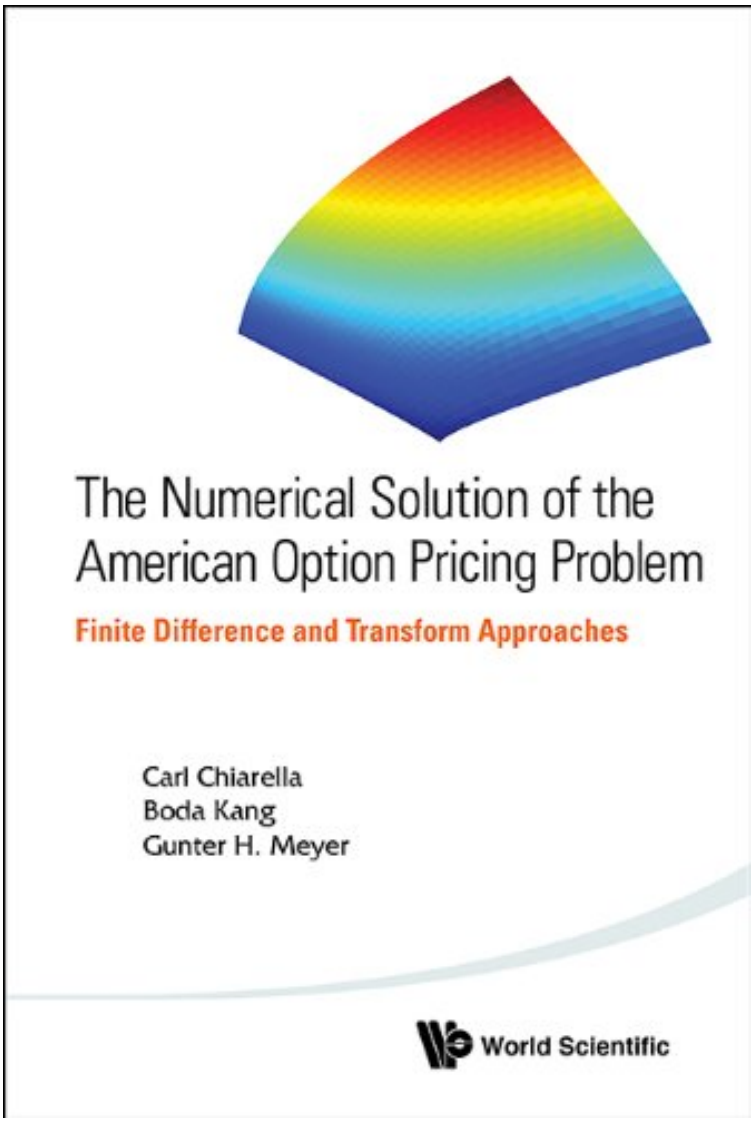

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Carl Chiarella, Boda Kang, Gunter H Meyer : The Numerical Solution of the American Option Pricing Problem:Finite Difference and Transform Approaches before purchasing it in order to gage whether or not it would be worth my time, and all praised The Numerical Solution of the American Option Pricing Problem:Finite Difference and Transform Approaches:

0 of 1 people found the following review helpful. Four StarsBy Witold JurekThe book is what I have expected.

The early exercise opportunity of an American option makes it challenging to price and an array of approaches have been proposed in the vast literature on this topic. In The Numerical Solution of the American Option Pricing Problem, Carl Chiarella, Boda Kang and Gunter Meyer focus on two numerical approaches that have proved useful for finding all prices, hedge ratios and early exercise boundaries of an American option. One is a finite difference approach which is based on the numerical solution of the partial differential equations with the free boundary problem arising in American option pricing, including the method of lines, the component wise splitting and the finite difference with PSOR. The other approach is the integral transform approach which includes Fourier or Fourier Cosine transforms. Written in a concise and systematic manner, Chiarella, Kang and Meyer explain and demonstrate the advantages and limitations of each of them based on their and their co-workers' experiences with these approaches over the years.

From the Inside FlapThe early exercise opportunity of an American option makes it challenging to price. The Numerical Solution of the American Option Pricing Problem focuses on three numerical methods that have proved useful for the numerical solution of the partial differential equations with free boundary problem arising in American option pricing, namely the method of lines, the sparse grid approach and the integral transform approach. It clearly explains and demonstrates the advantages and limitations of each of them using several examples.About the AuthorCarl Chiarella is Professor of Quantitative Finance at the University of Technology, Sydney where he teaches courses in advanced instruments, derivatives, synthetic finance products and financial decision making under uncertainty. His research interests include derivative securities pricing, term structure of interest rates, quantitative finance techniques, disequilibrium macroeconomics, asset pricing theory and empirics. Boda Kang is a Lecturer in Mathematical Finance in the Department of Mathematics at the University of York in the United Kingdom. Before joining York, he was a Senior Research Associate in the Finance Discipline Group and the Quantitative Finance Research Center at the University of Technology, Sydney for about 6 years. Before that he was completing his PhD under the direction of Professor Jerzy Filar. His research interests include financial derivatives pricing, computational finance, financial mathematics, energy and volatility derivatives modeling, time-consistent dynamic risk measures, Markov decision processes and their applications. Gunter Meyer is Professor Emeritus of Mathematics at the Georgia Institute of Technology in Atlanta, where he helped develop and taught in the MS program in quantitative and computational finance. His research interests include numerical methods for partial differential equations, free boundary problems, reaction diffusion problems in finance, reaction diffusion problems and numerical heat transfer, hysteresis, two-point boundary value problems for ordinary differential equations and hydrodynamic stability.