1. Record Nr. UNINA9910831177203321 Autore **Duffy Daniel J** Titolo Finite difference methods in financial engineering [[electronic resource] ]: a partial differential equation approach / / Daniel J. Duffy Chichester, England;; Hoboken, NJ,: John Wiley, c2006 Pubbl/distr/stampa **ISBN** 1-118-85648-1 1-118-67344-1 1-280-41120-1 9786610411207 0-470-85883-4 Descrizione fisica 1 online resource (441 p.) Collana Wiley finance series Classificazione QK 660 SK 980 Disciplina 332.60151 Soggetti Financial engineering - Mathematics Derivative securities - Prices - Mathematical models Finite differences Differential equations, Partial - Numerical solutions Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references (p. [409]-416) and index. Nota di contenuto 0 Goals of this Book and Global Overview; Contents; 0.1 What is this Book?: 0.2 Why has this Book Been Written?: 0.3 For Whom is this Book Intended?; 0.4 Why Should I Read this Book?; 0.5 The Structure of this Book; 0.6 What this Book Does Not Cover; 0.7 Contact, Feedback and More Information; Part I The Continuous Theory Of Partial Differentiall Equations; 1 An Introduction to Ordinary Differential Equations; 1.1 Introduction and Objectives; 1.2 Two-Point Boundary Value Problem; 1.2.1 Special Kinds of Boundary Condition; 1.3 Linear Boundary Value Problems; 1.4 Initial Value Problems 1.5 Some Special Cases 1.6 Summary and Conclusions; 2 An Introduction to Partial Differential Equations; 2.1 Introduction and Objectives; 2.2 Partial Differential Equations; 2.3 Specialisations; 2.3.1 Elliptic Equations; 2.3.2 Free Boundary Value Problems; 2.4 Parabolic Partial Differential Equations; 2.4.1 Special Cases; 2.5 Hyperbolic

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## Sommario/riassunto

The world of quantitative finance (QF) is one of the fastest growing areas of research and its practical applications to derivatives pricing problem. Since the discovery of the famous Black-Scholes equation in the 1970's we have seen a surge in the number of models for a wide range of products such as plain and exotic options, interest rate derivatives, real options and many others. Gone are the days when it was possible to price these derivatives analytically. For most problems we must resort to some kind of approximate method. In this book we employ partial differential equations (PDE) to