

ORDER FORM

All customers from Europe, Middle East and Africa (excluding Germany, Austria, Switzerland)

PHONE your credit card order:
FREE PHONE (UK only) 0800 243407 or
 (for overseas orders) +44 (0)1243 843-294
FAX your completed order form to:
 +44 (0)1243 843-296
POST your completed order form to:
 John Wiley & Sons Ltd., 1 Oldlands Way,
 Bognor Regis, West Sussex, PO22 9SA, UK
EMAIL: Customer@wiley.com
INTERNET: www.wiley.com

Postage rates
 (Amounts shown for the total order)
UK £3.60
Europe Surface mail £5.20/€7.00
 Air mail £12.45/€16.80
Outside Europe Surface mail £7.75
 Air mail £14.95

Delivery will be arranged by John Wiley & Sons Ltd, on your behalf via Wiley Distribution Services Ltd. Alternatively you may collect your order by prior arrangement. We can also quote for delivery by courier. Please e-mail cs-books@wiley.co.uk for details. Please allow 21 days for delivery.

MONEY BACK GUARANTEE
 If you are not completely satisfied we will refund your payment without question, if books are returned in a resaleable condition within 30 days of receipt.

Sub Total _____
 Postage _____
TOTAL _____

YOUR PERSONAL DATA
 We, John Wiley & Sons Ltd, will use the information you have provided to fulfil your request. In addition, we would like to:
 1. Use your information to keep you informed by post of titles and offers of interest to you and available from us or other Wiley Group companies worldwide, and may supply your details to members of the Wiley Group for this purpose.
 Please tick the box if you do not wish to receive this information
 2. Share your information with other carefully selected companies so that they may contact you by post with details of titles and offers that may be of interest to you.
 Please tick the box if you do not wish to receive this information.
 If, at any time, you wish to stop receiving information, please contact The Database Marketing Dept (databasegroup@wiley.co.uk) at John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex. PO19 8SQ, UK.

Customers from Germany, Austria and Switzerland

PHONE +49 (0)6201 606-400
FAX your completed order form to:
 +49 (0)6201 606-184
POST your completed order form to:
 Wiley-VCH, Customer Service Department,
 P.O. Box 10 11 61, 69451 Weinheim, Germany
EMAIL: service@wiley-vch.de
INTERNET: www.wiley-vch.de

TERMS OF PAYMENT:
 Please send me an invoice
 Cheque is enclosed

Please charge my credit card:
 Mastercard Visa Amex

In EU countries the local VAT is effective for books and journals. Postage will be charged. Whilst every effort is made to ensure that the contents of this leaflet are accurate, all information is subject to change without notice. Our standard terms and delivery conditions apply.

Customers from the Rest of the World

PHONE +1 877 762-2974 (toll free)
FAX +1 800 597-3299
MAIL your completed order form to:
 John Wiley & Sons, Inc., 10475 Crosspoint
 Blvd, Indianapolis, IN 46256 USA
EMAIL: custserv@wiley.com
INTERNET: www.wiley.com

Please charge my credit card:
 Mastercard Visa Amex Discover

Acct.# _____

Expiry Date _____

METHOD OF PAYMENT:

Payment enclosed. Total amount enclosed: _____
 (Make checks or money orders payable to John Wiley & Sons, Inc.)

Signature (Credit card orders invalid unless signed) _____

Please note that all prices are correct at time of going to press but are subject to change without notice.

Yes, I would like to order

(Please insert ISBN and title)

copy(ies) _____

copy(ies) _____

copy(ies) _____

copy(ies) _____

copy(ies) _____

copy(ies) _____

Yes! Please send me a free sample copy of the following journals _____

Each volume will be invoiced and despatched upon publication.

Send my order to

Title & Name _____

Job Title/Department _____

Company/University _____

Address _____

Town/City _____

Post/Zip Code _____

Country _____

Daytime Tel./Fax _____

Yes! Please place me on the Wiley Email list. My E-mail address is _____

Promotion Code VA161

WILEY FINANCE

With CD-ROM



Monte Carlo frameworks

Building Customisable High Performance C++ Applications

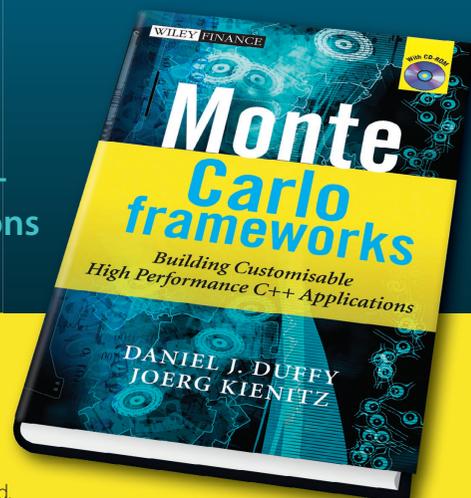
DANIEL J. DUFFY
 JOERG KIENITZ



Monte Carlo Frameworks

Building Customisable High-performance C++ Applications

DANIEL J. DUFFY, JOERG KIENITZ



The Monte Carlo method is now acknowledged as being one of the most robust tools for a range of applications in finance, from option pricing to risk management and optimization. One of the best languages for the development of Monte Carlo applications and frameworks is C++, an object-oriented and generic programming language which is also an industry standard.

This is one of the first books that describe all the steps that are needed in order to analyze, design and implement Monte Carlo applications. It discusses the financial theory as well as the mathematical and numerical background that is needed to write flexible and efficient C++ code using state-of-the-art design and system patterns, object-oriented and generic programming models in combination with standard libraries and tools.

The book is divided into four major parts, each one dealing with one major aspect of the current problem domain. The features and topics are:

- Option pricing for a range of one-factor and n-factor models
- European, Asian, baskets, Heston, jump models
- Early exercises, calculating option sensitivities
- The mathematical theory of n-factor Stochastic Differential Equations (SDE)
- An introduction to the numerical analysis of SDE
- Modelling SDE and the Finite Difference Method (FDM) in C++
- Applying design and system patterns (GOF, POSA) for improved design
- Extensive use of the STL and boost libraries
- Multi-threading and parallel programming (OpenMP) techniques for Monte Carlo
- Creating Excel-based applications using xlw, Automation and COM
- Extra discussion of mathematical foundations for Monte Carlo
- Working source code provided, numerous examples, exercises and projects related to the extension of the C++ framework

Included with the book is a CD containing the source code for all examples. It is strongly advised that you experiment with the code by compiling it and extending it to suit your needs. Support is offered via a user forum on www.datasimfinancial.com where you can post queries and communicate with other purchasers of the book.

This book is for those professionals who design and develop models in computational finance. This book assumes that you have a working knowledge of C++.

ORDER NOW AND RECEIVE A 30% DISCOUNT*

9780470060698 • 352pp • Hbk • £70.00 £49.00/€87.50 €61.25 • July 2009

*Quote promo code VA161 when ordering

About the Authors:

DANIEL J. DUFFY has been working with numerical methods in finance, industry and engineering since 1979. He has written four books on financial models and numerical methods and C++ for computational finance and he has also developed a number of new schemes for this field. He is the founder of Datasim Education and has a PhD in Numerical Analysis from Trinity College, Dublin.

JOERG KIENITZ is the head of Quantitative Analysis at Deutsche Postbank AG. He is primarily involved in the developing and implementation of models for pricing of complex derivatives structures and for asset allocation. He is also lecturing at university level on advanced financial modelling and gives courses on 'Applications of Monte Carlo Methods in Finance' and on other financial topics including Lévy processes and interest rate models. Joerg holds a Ph.D. in stochastic analysis and probability theory.

Table of Contents:

0 My First Monte Carlo Application One Factor Models	12 Data Structures and their Application to the Monte Carlo Method
1 Mathematical Preparations for the Monte Carlo Method	13 The Boost Library: An Introduction
2 An Introduction to Stochastic Differential Equations (SDE)	14 Instruments and PayOffs
3 Alternative SDEs and Toolkit Functionality	15 Path-Dependent Options
4 An Introduction to the Finite Difference Method for SDE	16 Affine Stochastic Volatility Models
5 Design and Implementation of Finite Difference Schemes in Computational Finance	17 Multi-Asset Options
6 Applying the Finite Difference Method in Finance	18 Advanced Monte Carlo I - Computing Greeks
7 Foundations of the Monte Carlo Method	19 Advanced Monte Carlo II - Early Exercise
8 Architectures and Frameworks for Monte Carlo Methods	20 Beyond Brownian Motion
9 System Decomposition and POSA Patterns	21 C++ Application Optimisation and Performance Improvement
10 Detailed Design using the GOF Patterns	22 Random Number Generation and Distributions
11 Combining Object-Oriented and Generic Programming Models	23 Some Mathematical Background
	24 An Introduction to Multi-threaded and Parallel Programming
	25 A Monte Carlo Method in OpenMP
	26 A Case Study of Numerical Schemes for the Heston Model
	27 Excel, C++ and Monte Carlo Integration