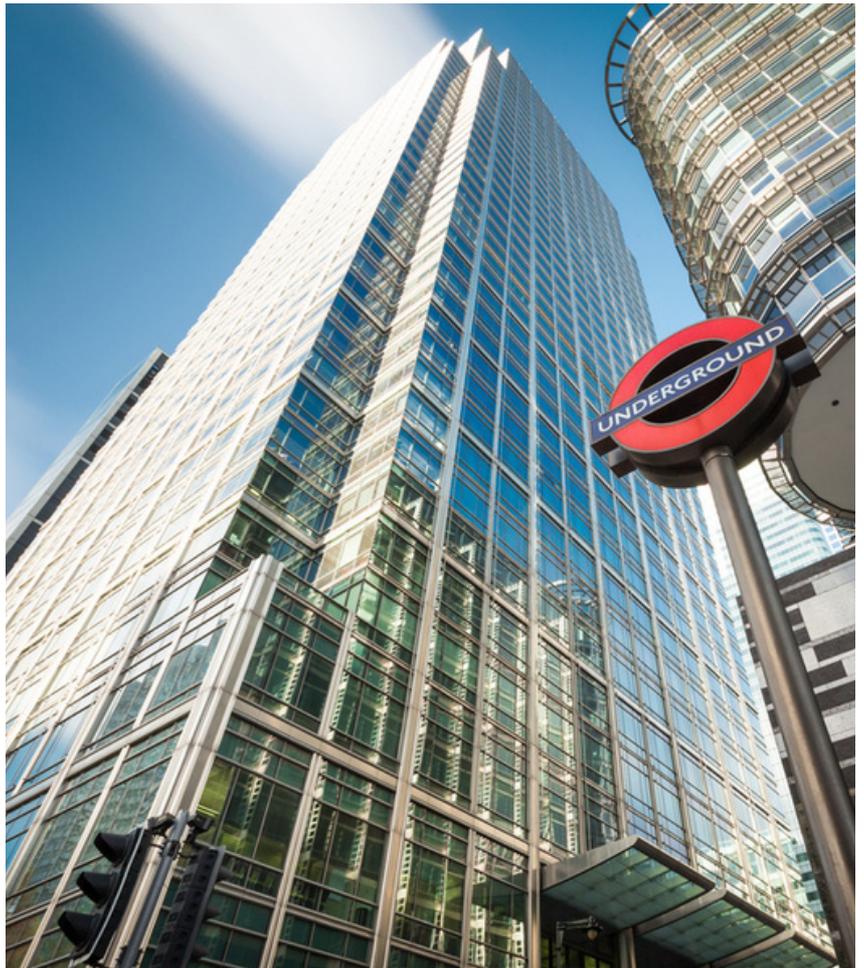


25TH-26TH MAY 2023

PRACTICAL HANDS-ON FINITE DIFFERENCE

CCT VENUES
SMITHFIELD
LONDON



PRESENTED BY
Jesper Andreasen
Brian Norsk Høge
Frederik Kryger-Baggesen

15% EARLY BIRD DISCOUNT UNTIL FRIDAY 12TH MAY 2023

SPECIAL OFFER - WHEN TWO COLLEAGUES ATTEND THE 3RD GOES FREE!

COURSE LEADERS



JESPER ANDREASEN

Global Head Of Quantitative Research, Saxo Bank



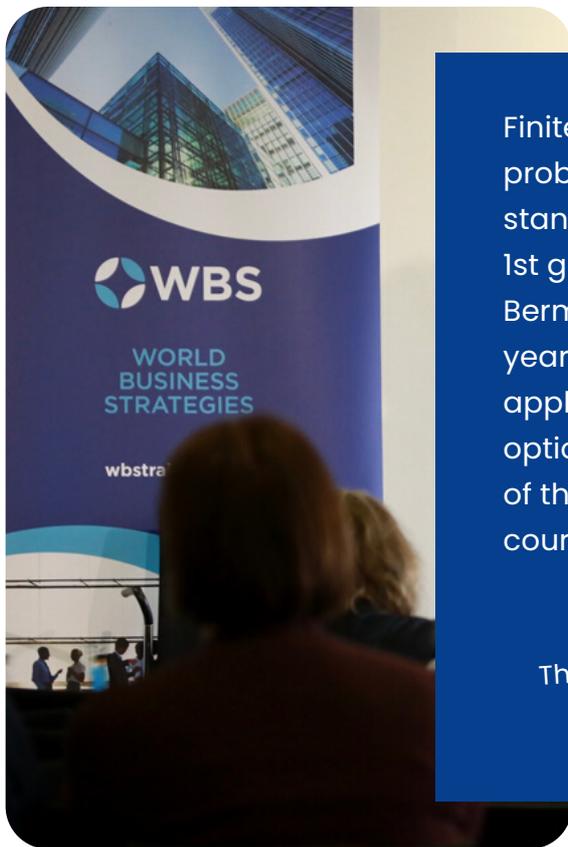
BRIAN NORSK HØGE

Senior Specialist Quant, Saxo Bank



FREDERIK KRYGER-BAGGESEN

Quantitative Analyst, Saxo Bank



Finite difference methods for option pricing problems is an evergreen subject. It is an industry standard that is used extensively for the pricing of 1st generation exotics such as American and Bermudan options and barrier options. Over recent years finite difference methods have found new applications, including volatility surface generation, option market making and market risk modeling. All of this will be considered in this practical hands-on course.

This course is limited to 21 students, a maximum of seven students per instructor.

WHAT MAKES THIS COURSE DIFFERENT?

- Learn about finite difference methods for option pricing from leading industry professionals.
 - Hands-on course where participants code production grade finite difference solvers.
 - Make abstract mathematical concepts concrete through numerical experiments.
 - Lots of tips and tricks for practical implementation.
 - Including what solver to use for different models: Black-Scholes, local volatility, yield curve models.
 - And how to handle Americans, digitals, and barriers.
 - Focus on code recycling and hygiene, and how to prepare, for example, for adjoint differentiation.
 - Learn how to code an xll add-in C++ and how to debug.
 - Maximum seven students per instructor.
 - Introductory video about installing C++ and the course project on your lap top.
 - No special prerequisites are necessary.
 - The teaching method is tried and tested on graduate students at Copenhagen University.
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COURSE OBJECTIVE

- Learning how to use finite difference methods for option pricing in practice.
- Learning about discrete duality, stability, convergence, grid dimensioning, grid alignment, and how-to-do in practice.

These concepts will be introduced through experiments with a self-coded one-dimensional PDE solver.

Upon completion of the course, you will be ready to implement the finite difference method for standard 1D models such as

- Black-Scholes,
- Local volatility models
- The Hull-White model

... and be ready to go on to harder problems, such as: stochastic local volatility, Cheyette, hybrid models and models for option market making.

In other words: From finite difference zero to hero in two days.

COURSE VENUE

CCT Venues (Smithfield)
Two East Poultry Avenue
London
EC1A 9PT

cctvenues.co.uk/venues/smithfield/

This 2 day workshop will focus on

PRE-COURSE

Introduction video on how to set up Visual Studio C++ on your laptop

DAY 1, 09:00 - 18:00

- Introduction:
The theta scheme for one dimensional partial differential equations.
Derivation and formal properties.
- Coding the different components for the theta solver.
- Interfacing to excel and doing some basic tests:
- Duality between backward and forward solution.
- Stability.
- Grid width.
- Grid node placement and smoothing.
- Convergence plots.

DAY 2, 09:00 - 17:00

- Code `fdBwdRunner()`.
 - Code `fdFwdRunner()`.
 - Work on exercises:
 - Time step convergence of the different theta schemes: implicit, explicit, crank-nicolson
 - Early exercise premium for American options: convergence and early exercise boundary.
 - Digital options.
 - Grid width and spatial convergence.
 - Discrete Dupire equation.
 - Barrier options.
 - Collect results and experiences. Discuss in class.
 - Discuss applications: traditional and some new ones.
 - Including option market making and margin modeling.
 - Have a look at a 2D solver.
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PRACTICAL HANDS-ON FINITE DIFFERENCE WORKSHOP
CCT VENUES (SMITHFIELD), LONDON
25TH - 26TH MAY 2023

CONFERENCE FEE STRUCTURE

	Early Bird Discount: 25% until 14th April	Early Bird Discount: 15% until 12th May	Regular Event Fee
Workshop Fee:	£1274.25 + UK VAT	£1444.15 + UK VAT	£1699.00 + UK VAT

Special Discount Code:

SPECIAL OFFER: When 2 colleagues attend the 3rd goes free!

70% Academic Discount / FULL-TIME Students Only

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TO REGISTER, PLEASE EMAIL THE COMPLETED BOOKING FORM TO:

sales@wbstraining.com

FLIGHT DETAILS:

All delegates flying into London on the morning of the event are reminded that they should arrive 30 minutes before the conference starts for registration. The venue's location is approximately 1 hour from all 3 main London airports, Heathrow, Gatwick and City. Returning flights should equally allow for the events finishing time.

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By completing this form, the client hereby enters into an agreement stating that if a cancellation is made in writing within two weeks of the event date no refund shall be given. However, in certain circumstances a credit note may be issued for future events. Prior to the two-week deadline, cancellations are subject to a fee of 25% of the overall event cost

DISCOUNT STRUCTURE:

The discount is available on any day permutation, and can be combined across delegates within the same company (only at the time of booking and not retrospectively).

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