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Editors

Topics in Numerical Methods for Finance

 Springer

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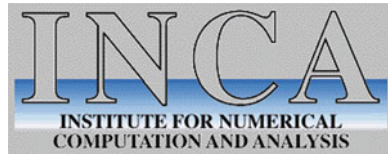
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Preface

The papers in this volume were presented at the Numerical Methods for Finance Conference 2011, which was held at the University of Limerick, Ireland. All of the papers, with the exception of those of the keynote speakers, have been subjected to a rigorous refereeing procedure by the Editorial Committee. There is one additional paper, which was presented and accepted for publication in, but was accidentally omitted from, the published proceedings of the 2006 conference.

The aim of the conference series Numerical Methods for Finance is to attract leading international researchers from both academia and industry to discuss new research advances in, and applications of, numerical methods relevant to the solution of real problems in finance. This is a topic of practical importance because many of the mathematical models in quantitative finance cannot be treated analytically, and therefore must be solved numerically. Frequently this requires intensive computation on large grids of computers. In some respects, the development of numerical methods has kept pace with the development of computing hardware; however, many complex and high-dimensional problems are beyond the scope of even the most powerful contemporary computer clusters. Therefore, new numerical algorithms are required, which are fast, accurate and efficient for such problems. A wide range of topics and applications are presented in this volume. These offer both academic and practitioner appeal, reflecting the broad scope of the conference.

The 2011 conference was held under the joint auspices of the Institute for Numerical Computation and Analysis, Dublin, and the Kemmy Business School, University of Limerick. It is a pleasure to thank all members of the various committees who helped with the onerous burdens placed on them by the local organisers. The vital and generous support of the sponsors is also acknowledged with much gratitude. The dedicated work of all reviewers in the pre-conference review process and the post-conference proceedings review process is greatly appreciated. Finally, it was the participants who made this conference a lively, friendly and technically stimulating event. Particular thanks are extended to the

keynote speakers who encouraged and facilitated the fascinating discussions and debates that emerged. It is to be hoped that participants will return to future conferences in the series.

Dublin, Ireland
Dublin, Ireland
Limerick, Ireland

Mark Cummins
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About the Editors

Mark Cummins is a Lecturer in Finance at the Dublin City University Business School. He holds a PhD in Quantitative Finance, with specialism in the application of integral transforms and the fast Fourier transform (FFT) for derivatives valuation and risk management. Mark has previous industry experience working as a Quantitative Analyst within the Global Risk function for BP Oil International Ltd., London. Mark has a keen interest in a broad range of energy modelling, derivatives, risk management and trading topics. He also has a growing interest in the area of sustainable energy finance, with particular focus on the carbon markets. Linked to Mark's industry experience, he holds a further interest in the area of model risk and model validation.

Finbarr Murphy is a Lecturer in Quantitative Finance at the University of Limerick, Ireland. Finbarr's key teaching and research interests lie in the field of credit risk and derivatives and more recently, in carbon finance. His research is focused on the application of generalised Lévy Processes and their application in the pricing and risk management of derivative products. Finbarr is also interested in the application of econometric techniques in finance. Prior to taking up his position in UL, Finbarr was a Vice President of Convertible Bond Trading with Merrill Lynch London.

John J.H. Miller is Director of INCA, the Institute for Numerical Computation and Analysis, in Dublin, Ireland. He is also a Fellow Emeritus of Trinity College, Dublin, where he was a member of the Mathematics Department. He received his Sc.D. from the University of Dublin and his Ph.D. in numerical analysis from the Massachusetts Institute of Technology. He completed his undergraduate degrees at Trinity College Dublin.

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