ESAIM: M2AN 44 (2010) 803
DOI: 10.1051/m2an/2010056

ESAIM: Mathematical Modelling and Numerical Analysis
www.esaim-m2an.org

FOREWORD

The application of probability theory to scientific computing is not a traditional topic for ESAIM: M2AN. The field is well covered by several leading journals. However, contemporary modelling applications require a growing competence in probability theory. Likewise, computational techniques based on the Monte-Carlo approach are increasingly ubiquitous. We have therefore found it appropriate to ask two experts of the field, namely Pierre Del Moral and Nicolas Hadjiconstantinou, to edit a special volume of Mathematical Modelling and Numerical Analysis.

The selected contributions deal with a wide range of topics in applied probability theory and stochastic analysis. The volume opens with an article by our two guest editors, who, in lieu of a preface, provide an introduction to the necessary material and an overview of the many applications fields covered: physics, biology, fluid mechanics, molecular chemistry, financial mathematics.

We thank our guest editors for their wonderful work. We are convinced that the present volume will foster interactions between the traditional readership of ESAIM: M2AN, mostly consisting of experts in PDE analysis and deterministic numerical techniques, and experts in probability theory and its applications.

Claude Le Bris and Anthony T. Patera,
Editors-in-Chief

Article published by EDP Sciences