



## Preface

### *Special Issue for SCPDE11*

The Fourth International Conference on Scientific Computing and Partial Differential Equations (SCPDE) was held at Hong Kong Baptist University from December 5 to December 9, 2011 (<http://www.math.hkbu.edu.hk/SCPDE11/>). It was a sequel to similar conferences held in Hong Kong (2002, 2005 and 2008).

The conference aims to promote research interests in scientific computation. In SCPDE 2011, there were over 100 participants from several countries and regions participated in the conference. The Programme included sixteen plenary speakers, thirty invited talks, thirty five contributed talks. Four main themes were organized to review recent scientific developments and explore exciting new directions in mathematical modeling and computational methods; in particular, they are Numerical Analysis and Applications of Volterra Functional Equations, Stochastic Computations, Electromagnetic and Acoustic Scattering, and Numerical Partial Differential Equations. This special issue contains a collection of 12 papers authored by the speakers of the SCPDE 2011 conference:

- Sebastien Imperiale and Patrick Joly  
Error Estimates for 1D Asymptotic Models in Coaxial Cables with Non-Homogeneous Cross-Section
- Christopher E. Goodyer, Peter K. Jimack, Andrew M. Mullis, Hongbiao Dong and Yu Xie  
On the Fully Implicit Solution of A Phase-Field Model for Binary Alloy Solidification in Three Dimensions
- Zhicheng Hu and Heyu Wang  
A Moving Mesh Method for Kinetic/Hydrodynamic Coupling
- Robert S. Callihan and Aihua W. Wood  
A Modified Helmholtz Equation with Impedance Boundary Conditions
- Wai-Sun Don, Antonio de Gregorio, Jean-Piero Suarez and Gustaaf B. Jacobs  
Assessing the Performance of A Three Dimensional Hybrid Central-WENO Finite Difference Scheme with Computation of A Sonic Injector in Supersonic Cross Flow

- Iurie Caraus and Zhilin Li  
Numerical Solutions of the System of Singular Integro-Differential Equations in Classical Holder Spaces
- Yanping Chen, Weishan Zheng and Tianliang Hou  
Error Estimates and Superconvergence of Mixed Finite Element Methods for Optimal Control Problems with Low Regularity
- Meiqing Wang, Chensi Huang, Chao Zeng and Choi-Hong Lai  
Two-Phase Image Inpainting: Combine Edge-Fitting with PDE Inpainting
- Changhui Yao  
Binary Level Set Methods For Dynamic Reservoir Characterization By Operator Splitting Scheme
- Fatemeh Pourakbari and Ali Tavakoli  
Modification of Multiple Knot B-Spline Wavelet for Solving (Partially) Dirichlet Boundary Value Problem
- Wanrong Cao and Zhongqiang Zhang  
Simulations of Two-Step Maruyama Methods for Nonlinear Stochastic Delay Differential Equations
- Hongjoong Kim and Kyoung-Sook Moon  
Stability of Symmetric Solitary Wave Solutions of A Forced Korteweg-de Vries Equation and the Polynomial Chaos
- Xue-Nian Cao, Jiang-Li Fu and Hu Huang  
Numerical Method for the Time Fractional Fokker-Planck Equation

Last but not least, on behalf of the organizers of the conference, we would like to thank Yunqing Huang and Chang Shu, Editors-in-Chief of Advances in Applied Mathematics and Mechanics (AAMM), for devoting a special issue of the journal to the Fourth International Conference on Scientific Computing and Partial Differential Equations, 2011. Our thanks also go to all the authors for contributing high quality papers and all the referees of this special issue for their diligent work. We would also like to thank the Croucher Foundation, the Hong Kong Baptist University, and the Hong Kong Mathematical Society for their generous supports and sponsors of the conference.

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