

## Preface

*Special Issue Dedicated to Professor Xiaoqing Jin's 60th birthday*

The 2017 Workshop on Computational Mathematics and Scientific Computing was held at University of Macau, Macao SAR, China, from May 20 to 22 in 2017. The workshop aims to provide a forum for leading experts and active young researchers in the field to exchange ideas and present their latest research achievements, as well as to explore exciting new directions in the areas. There were total 23 invited speakers from all over the world who delivered talks in the workshop. They are Professors (in alphabetical order) Zhao-Jun Bai (UC Davis), Zheng-Jian Bai (Xiamen U), Raymond H. F. Chan (CUHK), Wai-Ki Ching (HKU), Ming-Chih Lai (NCTU), Wen Li (SCNU), Zhi-Lin Li (NCSU), Matthew M. H. Lin (NCKU), Ping Lin (U Dandee), Xin Lu (Foshan U), Michael K. P. Ng (HKBU), Hong-Kui Pang (Jiangsu Normal U), Jie Shen (Purdue U), Hong Wang (U South Carolina), Xiao-Ping Wang (HKUST), Zhi-Bo Wang (Guangdong U of Tech), Yin-Min Wei (Fudan U), Gang Wu (CUMT), Ze-Jia Xie (U Macau), Chuan-Ju Xu (Xiamen U), Hong-Kun Xu (HDU), Shao-Liang Zhang (Nagoya U), Zhi Zhao (HDU).

The special issue in Numerical Mathematics: Theory, Methods and Applications is dedicated to Professor Xiao-Qing Jin on the occasion of his 60th birthday and in recognition of his outstanding contributions to Computational Mathematics. Professor Xiao-Qing Jin is a Distinguished Professor at Department of Mathematics, Faculty of Science and Technology, University of Macau. Currently, he is the president of East Asia Section of SIAM.

Professor Xiao-Qing Jin was born in September 1957 in Nanjing, China. He received his B.Sc from Nanjing Normal University in 1982, and PhD from University of Hong Kong in 1992 under the supervision of Professor Raymond H. Chan. After graduation, he has been working in University of Macau.

Professor Xiao-Qing Jin is a well-known researcher in Matrix Computations and Analysis. He is particularly known for his excellent contributions in iterative solvers for Toeplitz systems with applications, analysis for matrix commutators, and Riemannian optimization algorithms on matrix manifolds.

There are total 11 papers in this special issue, which cover several aspects in the computational mathematics and scientific computing.

- In the first paper, the authors implement and analyze the neural network model by the ordinary differential equations to compute the partially symmetric rank-one approximation for the fourth-order partially symmetric tensors.
- In the second paper, the authors propose a framework for studying optimal agency execution strategies in a Limit Order Book under a Markov-modulated market environment.

- In the third paper, a spectral deferred correction method is proposed and analyzed for the fractional differential equations.
- In the fourth paper, the two-dimensional, unsteady, viscous, incompressible and asymmetric flow of a micropolar fluid in a uniformly porous channel with expanding or contracting walls is investigated.
- In the fifth paper, the authors propose and analyze two algorithms for the split fixed point problem.
- In the sixth paper, for the transport equation with discontinuous coefficients, the authors propose a compact fourth order cubic spline collocation method.
- In the seventh paper, the effect of slip in the fluid-particle interaction is numerically studied.
- In the eighth paper, the authors discuss the Z-eigenvalue bounds for a tensor. In particular, a Z-spectral radius bound for an irreducible nonnegative tensor is given via the spectral radius of a nonnegative matrix.
- In the ninth paper, the authors propose separable preconditioners for solving the linear systems derived from time-space fractional Caputo-Riesz diffusion equations with time-dependent diffusion coefficients.
- In the tenth paper, the authors develop a space-time Petrov-Galerkin spectral method for linear and nonlinear time fractional diffusion equations involving either a Caputo or Riemann-Liouville derivative.
- In the eleventh paper, the authors propose an efficient algorithm to compute the maximal eigenpairs of large scale tridiagonal matrices with super-/sub-diagonal elements.

On behalf of organizing committee, we would like to thank Professor Tao Tang, Editor-in-Chief of Numerical Mathematics: Theory, Methods and Applications, for devoting a special issue of the journal to the 2017 Workshop on Computational Mathematics and Scientific Computing. We are grateful to the Vice Rector of University of Macau, Professor Rui P. Martins, for delivering a welcome speech in the opening ceremony of the workshop. We would also like to thank FDCT of Macao SAR, University of Macau, Faculty of Science and Technology, and Macao Mathematical Society for the partial financial support.

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