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Preface

Special Issue for the 11th East Asia SIAM Conference

The 11$^{\text{th}}$ East Asia SIAM conference was held at University of Macau, Macao S.A.R. from June 20 to 22 in 2016. The annual conference aims at promoting the application of mathematics to science, engineering and technology in East and South East Asia; basic research and education in Mathematics that supports application in science and technology in the region; and multidisciplinary research and engineering involving mathematics. In this conference, there were two plenary talks, six invited talks, four student paper prize presentations, and 117 contributed talks, please refer to the following website for detail

http://161.64.198.10/EASIAM2016/

The conference is the 11$^{\text{th}}$ in the series with the first 10 held in Hong Kong, Japan, China, Korea, Brunei, Malaysia, Taiwan, Indonesia, and Thailand, respectively.

This special issue contains 15 papers, which cover several aspects in mathematical modeling and computational methods. The work of each paper is briefly summarized as follows. Please be noted that the papers in the special issue appear by the alphabet order of the surname of the first author in each paper.

1. A. C. Bayu, S. R. Pudjaprasetya and I. Magdalena. The authors solve the 2D Euler equation by using a finite difference algorithm which is based on a three-layer approximation for the vertical flow region.

2. T. Chen, T. Kang, J. Li. The authors develop a fully discrete A-ϕ finite element scheme for solving a nonlinear model of type-II superconductors with analysis.

3. C.-H. Cho and C.-Y. Liu. The authors solve a second order nonlinear ODE blow-up problem by using finite difference method with convergence analysis on the numerical solution and the numerical blow-up time.

4. Z. Gao and G. H. Hu. we propose a high order well-balanced weighted compact nonlinear scheme for the gas dynamic equations under gravitational fields.

5. D. D. He and K. J. Pan. The authors develop a fifth-order combined compact difference scheme for solving the Stokes flow on polar geometries.

6. Iryanto and S.R. Pudjaprasetya. In this paper, a coupled model is used for simulating solitary wave run-up on a sloping beach and wave overtopping over a seawall.

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7. J. Kongson and S. Amornsamankul. The authors study the existence of positive solution and asymptotic stability of the model of the signal transduction process under a delay.

8. P. Lyu, S. W. Vong and Z. B. Wang. In this paper, a two-point boundary value problem with Caputo fractional derivative is considered, where the second order derivative of the exact solution is unbounded. The L1 convergence of the difference system is discussed rigorously.

9. I. Magdalena. In this paper, a two-layer non-hydrostatic numerical model is proposed to simulate the formation undular bores by tsunami wave fission.

10. Y. Nishiyama, M. Shinjo, K. Kondo and M. Iwasaki. The authors study the some integrable properties of a variant of the discrete hungry Toda equations and their relationship to eigenpairs of band matrices.

11. K. Ooi, Y. Mizuno, T. Sogabe, Y. Yamamoto and S.-L. Zhang. The authors proposed a robust numerical algorithm for solving a nonlinear eigenvalue problem.

12. J. N. Tzeng. The author introduce statistical approach to minimize the total error (truncation error and rounding error) of numerical differentiation.

13. Z.-J. Xie, X.-Q. Jin, and Z. Zhao. The authors proves some convergence bounds of the minimal residual method for solving Hermitian indefinite linear systems.

14. L. Yang. In this paper, the pinning effect in the domain wall motion is numerically studied in 2D with Landau-Lifshitz equation.

15. Z. H. Yao, G. Li and J. M. Gao. The authors present a high order finite volume weighted essentially non-oscillatory WENO scheme for solving the blood flow model in arteries.

On behalf of the organizing committee, we would like to thank Prof. Zhong-Ci Shi, Editor-in-Chief of East Asian Journal on Applied Mathematics, for devoting a special issue of the journal to the 11^{th} East Asia SIAM conference, 2016. We are grateful to the Vice Rector of University of Macau, Prof. Rui Martins, for delivering a speech in the opening ceremony of the conference. We would also like to thank the Dean of Faculty of Science and Technology, Prof. C. L. Philip Chen, and the Rector of University of Macau, Prof. Wei Zhao, for their kind support.

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