

ZHENGJIE SUN

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WORK

Nanjing University of Science and Technology, Nanjing, China

December 2020- Now

Associate Professor

School of Mathematics and Statistics

Hong Kong Baptist University, Hong Kong

December 2018 - December 2020

Postdoc, 2018 Hong Kong Scholar Program

Department of Mathematics

Supervisor: Leevan Ling

EDUCATION

Fudan University, Shanghai, China

September 2013 - June 2018

PhD in Applied Mathematics

School of Mathematical Sciences

Supervisor: Zongmin Wu

Zhejiang Gongshang University, Hang Zhou, China

September 2009 - July 2013

Bachelor of Information and Computational Science

Department of Mathematics and Statistics

RESEARCH INTERESTS

- Radial Basis Function
- Symplectic Method
- Numerical Methods for PDEs
- Numerical Approximation

CONFERENCES REPORTS

- Workshops on Mathematics for Data Sciences, Zhuhai Campus, Sun Yat-wen University, ZhuHai, China
Title: Meshless conservative methods for multivariate Hamiltonian partial differential equations.
- International Conference of Kernel-based Approximation Methods in Data Analysis, South China Normal University, GuangZhou, China
Title: Radial basis function methods for nonlinear Hamiltonian partial differential equations.

CONFERENCES PARTICIPATED

- International Conferences on Harmonic Analysis and its Application, Beijing, Peking Universtiy, 2017
- The 15th Annual Meeting of China Society for Industrial and Applied Mathematics, Qingdao, Ocean University of China, 2017
- One-dimensional Hyperbolic Conservation Laws and its Application, Shanghai, Shanghai Jiaotong Univeristy, 2015

- International Summer School on Scientific Computing, Beijing, Chinese Academy of Sciences, 2014

GRANTS

- National Natural Science Foundation of China, Principal investigator, Grant Number: 12101310
- Natural Science Foundation of Jiangsu Province, Principal investigator, Grant Number: BK20210315
- Jiangsu Shuangchuang Talent Program, Principal investigator, Grant Number: JSSCBS 20210222
- Participated in National Natural Science Foundation of China, Grant Number: 10631015
- 2018 Hong Kong Scholar Program

AWARDS

- 2017 National Scholarship, Fudan University
- 2014 National Scholarship, Fudan University
- 2012 National Scholarship, Zhejiang Gongshang University
- 2011 National Scholarship, Zhejiang Gongshang University
- 2012 Comap's Mathematical Contest in Modelling, Honorable Mention

PAPERS SUBMITTED

1. Wenwu Gao, Jiecheng Wang, **Zhengjie Sun**, Gregory E. Fasshauer, Quasi-interpolation for high-dimensional function approximation, *Numerische Mathematik*, revision submitted, 2021.

PUBLICATIONS

1. **Zhengjie Sun**, Yuyan Gao, High order multiquadric trigonometric quasi-interpolation method for solving time-dependent partial differential equations, *Numerical Algorithms*, 10.1007/s11075-022-01486-6, 2022.
2. Shengliang Zhang, **Zhengjie Sun**, Alpesh Kumar, Meshless symplectic and multi-symplectic scheme for the coupled nonlinear Schrödinger system based on local RBF approximation, *Computers and Mathematics with Applications*, 134:16-32, 2023.
3. **Zhengjie Sun**, Shengliang Zhang, A radial basis function approximation method for conservative AllenCahn equations on surfaces, *Applied Mathematics Letters*, 143:108634, 2023.
4. **Zhengjie Sun**, Yuyan Gao, A meshless quasi-interpolation method for solving hyperbolic conservation laws based on the essentially non-oscillatory reconstruction, *International Journal of Computer Mathematics*, 100(6):1303-1320, 2023.
5. **Zhengjie Sun**, Leevan Ling, A kernel-based meshless conservative Galerkin method for solving Hamiltonian wave equations, *SIAM Journal on Scientific Computing*, 44(4):A2789-2807, 2022.
6. **Zhengjie Sun**, Wenwu Gao, Ran Yang, A convergent iterated quasi-interpolation for periodic domain and its applications to surface PDEs, *Journal of Scientific Computing*, 93(2):37, 2022, 20pp.
7. **Zhengjie Sun**, A conservative scheme for two-dimensional Schrödinger equation based on multiquadric trigonometric quasi-interpolation approach, *Applied Mathematics and Computation*, 423, 2022, 12pp.
8. Yuyan Gao, **Zhengjie Sun**, Multi-symplectic quasi-interpolation method for the KdV equation, *Computational and Applied Mathematics*, 41(3):112, 2022, 17pp.

9. **Zhengjie Sun**, Zongmin Wu, Wenwu Gao, An iterated quasi-interpolation approach for derivative approximation, *Numerical Algorithms*, 85:255-276, 2020.
10. Wenwu Gao, **Zhengjie Sun**, High-order numerical solution of time-dependent differential equations with quasi-interpolation, *Applied Numerical Mathematics*, 146:276-290, 2019.
11. **Zhengjie Sun**, Multi-symplectic Quasi-interpolation Method for Hamiltonian Partial Differential Equations, *Journal of Computational Physics*, 395:125-143, 2019.
12. **Zhengjie Sun**, A Meshless Symplectic Method for Two-dimensional Nonlinear Schrödinger Equations Based on Radial Basis Function Approximation, *Engineering Analysis with Boundary Elements*, 104:1-7, 2019.
13. **Zhengjie Sun**, Conservative or dissipative quasi-interpolation method for evolutionary partial differential equations, *Engineering Analysis with Boundary Elements*, 96:78-83, 2018.
14. **Zhengjie Sun** and Zongmin Wu, Meshless conservative schemes for multivariate Hamiltonian partial differential equations, *Journal of Scientific Computing*, 76:1168-1187, 2018.
15. **Zhengjie Sun** and Wenwu Gao, A energy-momentum conserving scheme for Hamiltonian wave equation based on multiquadric trigonometric quasi-interpolation, *Applied Mathematical Modelling*, 57:179-191, 2018.
16. **Zhengjie Sun** and Wenwu Gao, A meshless scheme for Hamiltonian partial differential equations with conservation properties, *Applied Numerical Mathematics*, 119:115-125, 2017.
17. **Zhengjie Sun** and Ling Zhu, Simple proofs of the Cusa-Huygens-type and Becker-Stark- Type inequalities, *Journal of Mathematical Inequalities*, 7(4):563-567, 2013.
18. **Zhengjie Sun** and Ling Zhu, Some refinements of inequalities for circular functions, *Journal of Applied Mathematics*, 9 pages, 2011.
19. **Zhengjie Sun** and Ling Zhu, On new Wilker-type inequalities. *ISRN Mathematical Analysis*, 7 pages, 2011.