Jiahui Zhang

Curriculum vitae

School of Mathematical Sciences
University of Science and Technology of China
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Education

- *Ph.D.* expected June 2025
- *Ph.D.* in School of Mathematical Sciences, University of Science and Technology of China, Hefei, Anhui, P.R. China, September 2020 – June 2025.
  Thesis Title: High order well-balanced methods for hyperbolic balance laws
  Advisor: Professor Yan Xu, Professor Yinhua Xia
- *B.Sc.* in School of Mathematical Sciences, Nanjing Normal University, Nanjing, Jiangsu, P.R. China, September 2016 – June 2020.

Research Interests

- High order numerical methods for partial differential equations, such as
  - Finite difference/finite volume weighted ENO (WENO) methods.
  - Finite element discontinuous Galerkin (DG) and local discontinuous Galerkin (LDG) methods.
- Structure-preserving methods for hyperbolic conservation laws with source terms.
- Well-balanced methods for nonconservative hyperbolic systems.
- Arbitrary Lagrangian-Eulerian methods for moving domain problems.

Publications

[1] J. Zhang, Y. Xia and Y. Xu, *Structure-preserving finite volume arbitrary Lagrangian-Eulerian WENO schemes for the shallow water equations*, Journal of Computational Physics, 473 (2023), Article number: 111758.

[2] J. Zhang, Y. Xia and Y. Xu. *Moving water equilibria preserving discontinuous Galerkin method for the shallow water equations*, Journal of Scientific Computing, 95 (2023), Article number: 48.

[3] J. Zhang, Y. Xia and Y. Xu, *Well-balanced path-conservative discontinuous Galerkin methods with equilibrium preserving space for two-layer shallow water equations*, Journal of Computational Physics, 520 (2025), Article number: 113473.

[4] J. Zhang, Y. Xia and Y. Xu, *Equilibrium preserving space in discontinuous Galerkin methods for hyperbolic balance laws*, Communications in Computational Physics, to appear.

[5] J. Zhang, Y. Xia and Y. Xu, *Well-balanced discontinuous Galerkin method with flux globalization for rotating shallow water equations*, Journal of Computational Physics, to appear.