Curriculum Vitae – Yizhou Liang

PERSONAL INFORMATION

Name: Yizhou Liang
Gender: Male
Data of Birth: Oct. 9th, 1994
Nationality: Chinese
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POSITIONS

- **Postdoctoral Research Associate,** Sep. 2025 –
  University of Oxford, UK
- **Postdoctoral Research Associate,** Mar. 2025 – Aug. 2025
  University of Edinburgh, UK
- **Humboldt Fellow, Postdoctoral Research Associate**, Dec. 2022 -- Feb. 2025
  University of Augsburg, GERMANY
- **Visiting Scholar**, Sept. 2022 -- Nov. 2022
  Peking University, CHINA

EDUCATION

- **Ph.D. Mathematics**, Sept. 2016 -- Jul. 2022
  Peking University, CHINA
  - Major: Computational Mathematics
  - Advisor: Professor Jun Hu
- **B.S. Mathematics**, Sept. 2012 -- Jul. 2016
  Peking University, CHINA

HONORS/AWARDS

- Humboldt Research Fellowship for Postdocs, 2022
- Excellent Doctoral Dissertation Award of Peking University, 2022
- Best paper award of Beijing Tianjin Hebei computational mathematics academic exchange, 2021
- Second Prize of EASIAM Student Paper Award, 2021
- President Scholarship of Peking University, 2021

- College Scholarship in School of Mathematical Sciences of Peking University, 2020

RESEARCH INTERESTS

Broadly: Finite element method, Numerical analysis, Nonlinear partial differential equation

Specifically:

- Finite element methods for Hodge wave equations
- Numerical methods and analysis for nonlinear partial differential equations

CONFERENCES/TALKS

- The 14th Annual Meeting of Computational Mathematics of Chinese Mathematical Society, Changsha, Aug. 2025 (Title: Numerical methods for solving Gross-Pitaevskii eigenvalue problem)
- 11th PKU Workshop on Numerical Methods for PDEs, Beijing, Jul. 2025 (Title: Numerical methods for solving Gross-Pitaevskii eigenvalue problem)
- The 10th International Conference on Computational Methods in Applied Mathematics, Bonn, Jun. 2024 (Title: Local bounded commuting projections for Discrete Gradgrad Complexes)
- The 10th International Congress on Industrial and Applied Mathematics, Tokyo, Aug., 2023 (Title: Conforming Finite Element Gradgrad and Divdiv Complexes in R^3)
- The 29th Biennial Numerical Analysis Conference, Glasgow, June, 2023 (Title: Local Bounded Commuting Projections for Hilbert Complexes)
- European Finite Element Fair, The Netherlands, May, 2023 (Title: Local Bounded Commuting Projections for Hilbert Complexes)
- The 10th Finite Element Conference, Urumqi, Jul., 2021 (Title: Discrete and Conforming Gradgrad Complexes in Three-dimensional Space)
- The 18th Annual Meeting of the China Society for Industrial and Applied Mathematics (CSIAM 2020), Workshop on nonstandard finite element method for nonlinear problems, Changsha, Nov., 2020 (Title: Discrete and Conforming Gradgrad Complexes in Three-dimensional Space)
- The 3th Beijing Graduate Student forum on Applied and Computational Math, Beijing, Oct., 2020 (Title: Finite Element for Linearized Einstein-Bianchi System)

PUBLICATIONS

Published and accepted

1. D. Gallistl, M. Hauck, **Y. Liang**, and D. Peterseim. Mixed finite elements for the Gross-Pitaevskii eigenvalue problem: a priori error analysis andguaranteed lower energy bound. IMA Journal of Numerical Analysis, Volume 45, Issue 3, May 2025, Pages 1320–1346.

2. Jun Hu, **Yizhou Liang**, Rui Ma and Min Zhang. *A family of conforming finite element divdiv complexes on cuboid meshes*. Numer. Math. 156, 1603–1638 (2024).
3. Jun Hu, **Yizhou Liang** and Ting Lin. *Finite Element Grad Grad Complexes and Elasticity Complexes on Cuboid Meshes*. J Sci Comput 99, 50 (2024).
4. Jun Hu, **Yizhou Liang**, and Rui Ma. *Conforming finite element divdiv complexes and the application for the linearized einstein–bianchi system.* SIAM Journal on Numerical Analysis, **60**(3):1307–1330, 2022.
5. Jun Hu, **Yizhou Liang**, *Conforming discrete gradgrad-complexes in three dimensions*. Math. Comp. **90** (2021), no. 330, 1637-1662.

Submitted and in preparation

1. Moritz Hauck, **Yizhou Liang,** *A hybrid high-order method for the Gross-Pitaevskii eigenvalue problem,* Arxiv: 2506.19944. Submitted
2. **Yizhou Liang**, and Ngoc Tien Tran, *A hybrid high-order method for the biharmonic problem*, Arxiv: 2504.16608. Submitted
3. Moritz Hauck, **Yizhou Liang**, and Daniel Peterseim. *Positivity preserving finite element method for the Gross-Pitaevskii ground state: discrete uniqueness and global convergence*. Arxiv: 2405.17090. Submitted
4. Jun Hu, **Yizhou Liang**, and Ting Lin, *Local Bounded Commuting Projection Operators for Discrete Gradgrad Complexes*. ArXiv:2304.11566.
5. Jun Hu, **Yizhou Liang**, and Ting Lin, *Local Bounded Commuting Projection Operators for Discrete de Rham Complexes*. ArXiv:2303.09359.

ACADEMIC SERVICE

- The 4th Beijing Graduate Student forum on Applied and Computational Math, Beijing, Sept., 2021, Co-Organize

TEACHING EXPERIENCES

Teaching Assistant in Peking University

- Advanced Algebra I *Sept. 2018--Jan. 2019*
- Advanced Algebra II *Feb. 2019--Jun. 2019*
- Mathematical Analysis I *Sept. 2019--Jan. 2020*
- Mathematical Analysis III *Sept. 2020--Jan. 2021*