Chenyang Li

Address: 500 Dongchuan Rd., Shanghai 200241, China

+86 18857095710 | leefem1004@gmail.com

Personal Website: https://leefem1004.github.io

EDUCATION

• East China Normal University

Sept. 2023-Present

Ph.D. student in Computational Mathematics.

Shanghai, China

- · Address: School of Mathematical Sciences, East China Normal University, Shanghai 200241, China.
- Concentration: Numerical analysis and simulation of incompressible flow coupled with multi-physics fields.
- Supervisor: Haibiao Zheng, Associate Professor, School of Mathematical Sciences and Shanghai Key
 Laboratory of Pure Mathematics and Mathematical Practice, East China Normal University, Shanghai
 200241, China.

• Wenzhou University 🏶

Sept. 2020-Jul. 2023

M.S. in Computational Mathematics.

Wenzhou, China

- Address: College of Mathematics and Physics, Wenzhou University, Wenzhou 325035, China.
- Concentration: Finite element discretizations for incompressible flow with variable density.
- Dissertation: Research on the first-order Euler finite element algorithm for two-dimensional variable density MHD system.
- Supervisor: Yuan Li. Associate Professor; Rong An. Professor. College of Mathematics and Physics, Wenzhou University, Wenzhou 325035, China.

• Zhejiang Ocean University 🏶

Sept. 2016-Jul. 2020

B.S. in Mathematics and Applied Mathematics (Normal Major).

Zhoushan, China

- · Address: School of Information Engineering, Zhejiang Ocean University, Zhoushan 316000, China.
- Dissertation: The integration of mathematical modeling concepts into secondary school mathematics.

PERSONAL INFORMATION

- Date of Birth: October 4, 1999.
- Nationality: China.

RESEARCH INTERESTS

Computational fluid dynamics, Numerical solution of partial dierential equations (PDEs), Finite element methods, Stabilized mixed finite element methods. Numerical analysis and simulation of the time-dependent coupling model including Navier-Stokes equation, Stokes-Darcy System, Natural Convection Model, Magnetohydrodynamics (MHD) System, Chemotaxis–Navier-Stokes System. The time-dependent coupling model with variable density including Navier-Stokes Equation with variable density, Natural Convection Model with variable density, Magnetohydrodynamics System with variable density, Ericksen-Leslie system with variable density.

TECHNICAL SKILLS

- **Programming:** FreeFem++, TecPlot, Paraview, Matlab, LaTeX, Fenics.
- Writing: Research manuscripts, funding proposals.

RESEARCH EXPERIENCE

- [1] Algorithm study of the incompressible magnetohydrodynamic equations with variable density in 2D. Xinmiao Talents Program of Zhejiang Province, **Principal Investigator (P.I.)**, Fiscal Year 2022-2024.
- [2] Convergence analysis of finite element discrete scheme for the incompressible magnetohydrodynamics system with variable density. the Master's Innovation Foundation of Wenzhou University. **Principal Investigator (P.I.)**, Fiscal Year 2022-2023.
- [3] Error analysis of first-order Euler linearized finite element scheme for the 2D magnetohydrodynamics system with variable density. The Innovation Foundation of Wangxiaoan in Wenzhou University, **Principal Investigator (P.I.)**, Fiscal Year 2022-2023.
- [4] Blow up and Existence of the solutions for biological chemotaxis models. The Innovation Foundation of Zhejiang Ocean University. **Principal Investigator (P.I.)**, Fiscal Year 2018-2019.

HONORS AND AWARDS

- Graduate Academic Scholarship, East China Normal University, Shanghai, China. 2023-2024
- Outstanding Graduates of Zhejiang Province, Wenzhou, China. 2023. June.
- Outstanding Graduates of Zhejiang Ocean University, Zhoushan, China. 2020. June.

REFEREED JOURNAL PUBLICATIONS AND ONGOING WORKS

- [1] Chenyang Li, Yuan Li. Optimal L2 error analysis of first-order Euler linearized finite element scheme for the 2D magnetohydrodynamics system with variable density. Computers and Mathematics with Applications 128 (2022): 96-107.
- [2] Yuan Li, Chenyang Li, Xuewei Cui. Spatial error analysis of a new Euler finite element scheme for the incompressible flows with variable density. Submitted.
- [3] Chenyang Li, Haibiao Zheng. Temporal error analysis of a BDF2 time-discrete scheme for the incompressible Navier-Stokes equations with variable density. Journal of Computational and Applied Mathematics. Submitted.
- [4] Atrout Sabah, Md. Abdullah Al Mahbub, Chenyang Li, and Haibiao Zheng. Eicient and Long-Time Accurate Second-Order Decoupled Method for the Blood Solute Dynamics Model. International Journal of Numerical Analysis and Modeling. Submitted.
- [5] Chenyang Li. Error analysis of a Euler finite element scheme for Natural convection model with variable density. https://doi.org/10.48550/arXiv.2504.04381.
- [6] Chenyang Li. Error Estimate of a linearized Second-order Fully Discrete Finite Element Method for the bioconvection flows with concentration dependent viscosity. https://doi.org/10.48550/arXiv.2504.04357.
- [7] Chenyang Li, Chunchi Liu, Yizhong Sun, Haibiao Zheng. Error estimate of parallel decoupled stabilized finite element algorithm for the fully mixed Stokes-Darcy Problems. Under Preparation.
- [8] Chenyang Li. Unconditional Convergence Of High-Order Extrapolations Of The Crank-Nicolson, Finite Element Method For the bioconvection flows with concentration dependent viscosity. Under Preparation.
- [9] Chenyang Li, Yuze Lu. Unconditional convergence and optimal L2 error estimates of the Crank–Nicolson extrapolation FEM for the nonstationary Navier–Stokes equations. Under Preparation.

REFERENCES

1. Haibiao Zheng

Associate Professor, School of Mathematical Sciences and Shanghai Key Laboratory of Pure Mathematics and Mathematical Practice, East China Normal University, Shanghai 200241, China.

Email: hbzheng@math.ecnu.edu.cn

Relationship: Ph.D. Advisor.

2. Yuan Li

Associate Professor, College of Mathematics and Physics, Wenzhou University, Wenzhou 325035, China.

Email: liyuan@wzu.edu.cn *Relationship: M. S. Advisor.*

3. Rong An

Professor, College of Mathematics and Physics, Wenzhou University, Wenzhou 325035, China.

Email: anrong@wzu.edu.cn *Relationship: M. S. Advisor.*

SOCIAL MEDIA

