



Curriculum Vitae

Yihong Chen 陈奕宏

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Education

- Bachelor of Science Department of Mathematical Sciences, Tsinghua University 2016–2020
- Doctor of Philosophy Department of Mathematical Sciences, Tsinghua University 2020–2025
Supervisor: Professor Wen-An Yong
Dissertation: Discrete-velocity-direction models and moment methods of kinetic equations.

Work Experience

- Post-doctoral Department of Electronic Engineering, Tsinghua University 2025–present
Collaborating supervisor: Associate Professor Quanming Yao
Project: LLM Agent and its applications

Research Interests

- Large language models, AI agent
- Model reduction and numerical computation of kinetic equations

Honors and Awards

- 2015, the second prize of Chinese Mathematical Olympiad
- 2017–2020, member of Tsinghua Xuetang Mathematics Programs
- 2017, Academic Excellent Award in Tsinghua University
- 2018, Academic Excellent Award in Tsinghua University
- 2019, Comprehensive Excellent Award in Tsinghua University
- 2025, Excellent Doctoral Dissertation in Tsinghua University

Publications

Journal Articles

- [1] **Yihong Chen**, Qian Huang, Wen-An Yong, Ruixi Zhang. Poisson quadrature method of moments for 2D kinetic equations with velocity of constant magnitude. *Multiscale Modeling and Simulation*, 23(1), 2025. <https://doi.org/10.1137/23m1620181>
- [2] **Yihong Chen**, Qian Huang, Wen-An Yong. Discrete-velocity-direction models of BGK-type with minimum entropy: II. Weighted models. *Journal of Scientific Computing*, 99(84), 2024. <https://doi.org/10.1007/s10915-024-02531-3>
- [3] Qian Huang, **Yihong Chen**, Wen-An Yong. Discrete-velocity-direction models of BGK-type with minimum entropy: I. Basic Idea. *Journal of Scientific Computing*, 95(3), 2023. <https://doi.org/10.1007/s10915-023-02211-8>

- [4] Tianshu Li, **Yihong Chen**, Qian Huang, Wen-An Yong. Combining hyperbolic quadrature method of moments and discrete-velocity-direction models for solving BGK-type equations. *arXiv:2411.12654*.
- [5] Ruixi Zhang, **Yihong Chen**, Qian Huang, Wen-An Yong. Dissipativeness of the hyperbolic quadrature method of moments for kinetic equations. *arXiv:2406.13931*, 2024.
- [6] **Yihong Chen**, Qian Huang, Hui Yu. Moment methods for the mean field models of active particles. *in preparation*.

Presentations

- [1] Title: Discrete-velocity-direction models of BGK-type with minimum entropy. *The 19th International Conference on Hyperbolic Problems: Theory, Numerics and Applications*, July 1-5, 2024, Shanghai, China.
- [2] Title: Discrete-velocity-direction models of BGK-type with minimum entropy. *2023 Jingjinji+ Conference on Computational Mathematics*, August 28-29, 2023, Taiyuan, China.

Skills

- **Language:** Chinese (native), English (fluent)
- **Programming:** C++, Python, MATLAB, LaTeX

Teaching Experience

- Teaching Assistant, Calculus A(1), Tsinghua University, September 2022-January 2023
- Teaching Assistant, Calculus A(2), Tsinghua University, February 2022-June 2022
- Teaching Assistant, Calculus A(1), Tsinghua University, September 2021-January 2022
- Teaching Assistant, Calculus A(2), Tsinghua University, February 2020-June 2021
- Teaching Assistant, Linear Algebra, Tsinghua University, September 2020-January 2021