Yingtian "Bill" Chen
陈颖天 · 陳穎天

Version: April 2025
Email: ybchen(at)umich.edu
ORCiD: 0000-0002-5970-2563
Website: yingtianchen.com

Education

- **University of Michigan Department of Astronomy** | Ann Arbor, US — 2020 – 2026
  Ph.D. candidate in Astronomy and Astrophysics
  M.S. in Astronomy and Astrophysics
- **Peking University School of Physics** | Beijing, China — 2016 – 2020
  B.S. in Physics (with honours)

Experience

- **Visiting Researcher**, MIT Kavli Institute | Cambridge, US — 2019

Research Interests

Galaxy formation · Galactic archaeology · Star clusters · Stellar streams · Computational astrophysics

- Galaxy and star cluster formation in high-resolution hydrodynamical simulations.
- Semi-analytical modeling of star cluster evolution in cosmological contexts.
- Probing the structure and evolution of galaxies and star clusters via stellar streams.

Honours & Awards

- **Rackham Predoctoral Fellowship**, UM — 2025
- **Rackham Conference Travel Grant** × 2, UM — 2023 & 2024
- **Rackham International Student Fellowship**, UM — 2021
- **Weiming Physics Scholarship**, PKU (未名物理学子) — 2020
- **Outstanding Graduate** of Beijing (北京市普通高等学校优秀毕业生) — 2020
- **First Prize & Best speaker**, Xingcheng Forum, PKU (兴诚学术论坛一等奖 & 最佳报告奖) — 2019
- **Huabao Funding for Undergraduate Research Program**, PKU (本科生科研华宝基金) — 2018
- **National Scholarship** (国家奖学金) — 2018
- **Pacemaker to Merit Student**, PKU (三好学生标兵) — 2018
- **Outstanding Award & SIAM Award**, Mathematical Contest in Modeling — 2018
- **Gold Medal**, Chinese Physics Olympiad (全国中学生物理竞赛金牌) — 2015

Selected Talks

- **Conference talk** (confirmed), *Gravity in the Local Group*, CMU | Pittsburgh, US — 2025
- **Invited seminar**, *KICP seminar*, UChicago | Chicago, US — 2025
- **Invited seminar**, *Nearby Universe group meeting*, CCA, Flatiron Institute | New York, US — 2025
- **Invited seminar**, American Museum of Natural History | New York, US — 2025
- **Lunch talk** × 5, *Astronomy grad lunch talk series*, UM | Ann Arbor, US — 2021 – 2025
- **Invited talk**, *DESI MWS telecon* | Remote — 2024
- **Poster & flash talk**, *DGSCS 2024*, UChicago | Chicago, US — 2024
- **Invited seminar**, PKU · THU · SHNU · SHAO · SJTU · PMO · NJU · ZJU | Beijing · Shanghai · Nanjing · Hangzhou, China — 2024

- **Invited seminar**, *Galaxy Formation seminar*, CCA, Flatiron Institute | New York, US 2024
- **Invited talk**, UChicago | Remote 2024
- **Invited talk**, *SMWLV Star Clusters Working Group meeting* | Remote 2023
- **Conference talk**, *MODEST-23*, NU | Evanston, US 2023
- **Conference talk**, *Great Lakes Clusters and Streams*, UM | Ann Arbor, US 2023
- **Talk**, *Seminar for undergraduate students*, PKU | Beijing, China 2019
- **Talk**, *Xingcheng Forum*, PKU | Beijing, China 2019
- **Talk**, *Seminar for theoretical physics*, FDU | Shanghai, China 2019

Teaching

- **Guest lecturer**, *Cosmological N-body Simulations*, UM | Ann Arbor, US 2025
  ASTRO 534: The Extragalactic Universe (grad-level cosmology)
- **Graduate student instructor**, UM | Ann Arbor, US 2021 & 2024
  ASTRO 104: Alien Skies: A Tour Through the Universe
  ASTRO 106: Aliens
  ASTRO 115: Introductory Astrobiology: The Search for Life in the Universe

Services

Professional services

- **Referee**, ApJ · MNRAS Since 2023
- **Code developer**, `ART` · `gala` · `galax` · `galpy` Since 2024
- **Conference session co-chair**, *DGSCS 2024*, UChicago | Chicago, US 2024
- **Conference LOC chair**, *Great Lakes Clusters and Streams*, UM | Ann Arbor, US 2023
- **Organizer**, *Stellar Halos Group meeting* (weekly), UM | Ann Arbor, US Since 2024

University services

- **Organizer**, *Astronomy grad lunch talk series* (weekly) 2024 – 2025
- **Organizer**, *Astrocoffee journal club* (bi-weekly) 2022 – 2025
- **Organizer**, *Preliminary examination preparation club* (weekly) 2022 – 2025
- **Chair**, *UM Chinese astronomers networking group* Since 2022
- **Department bread baker** (weekly) 2021 – 2022

Skills

High performance computing · Data analysis and visualization · Machine learning · Web development

- **Programming Languages:** `C/C++` · `Python` · `Latex` · `MATLAB` · `HTML/CSS`
- **Software/packages:** `ART` · `AREPO` · `GADGET` · `PeTar` · `MPI` · `AGAMA` · `multiprocessing` · `NumPy` · `Matplotlib` · `SciPy` · `scikit-learn` · `PyTorch` · `Astropy` · `yt` · `gala` · `galax` · `galpy` · `Bootstrap` · `Git`
- **Languages:** Mandarin Chinese (native) · English (fluent)

References

- **Dr. Oleg Y. Gnedin** (Ph.D. advisor), Professor, UM. ✉`ognedin(at)umich.edu`
- **Dr. Monica Valluri**, Research Professor, UM. ✉`mvalluri(at)umich.edu`
- **Dr. Hui Li** (李辉), Assistant Professor, THU. ✉`hliastro(at)tsinghua.edu.cn`

Publications

See the complete list of publications in ADS

- **12 papers (10 refereed) in total:** citations > 130, h-index = 7
- **9 papers (8 refereed) as first author:** citations > 120, h-index = 7

Publications as first author or by †supervised students

1. †Colin Holm-Hansen✉, **Yingtian Chen**✉, & Oleg Y. Gnedin, *A Catalog of mock stellar streams in a Milky Way-like galaxy*, in prep. for OJAp. 2025
2. **Yingtian Chen**✉, Oleg Y. Gnedin, Vadim A. Semenov, & Hui Li, *Simulating clustered star formation in the early Universe*, in prep. for AAS journals. 2025
3. **Yingtian Chen**✉, Hui Li✉, & Oleg Y. Gnedin, *Stellar streams reveal the mass loss of globular clusters*, ApJL **980**, L18. 2025
4. **Yingtian Chen**✉, Monica Valluri, Oleg Y. Gnedin, & Neil Ash, *Improved particle spray algorithm for modeling globular cluster streams*, ApJS **276**, 32. 2025
5. **Yingtian Chen**✉ & Oleg Y. Gnedin, *Galaxy assembly revealed by globular clusters*, OJAp **7**, 23. 2024
6. **Yingtian Chen**✉ & Oleg Y. Gnedin (2024) *Catalogue of model star clusters in the Milky Way and M31 galaxies*, MNRAS **527**, 3692. 2024
7. **Yingtian Chen**✉ & Oleg Y. Gnedin (2023) *Formation of globular clusters in dwarf galaxies of the Local Group*, MNRAS **522**, 5638. 2023
8. **Yingtian Chen**✉ & Oleg Y. Gnedin, *Modeling the kinematics of globular cluster systems*, MNRAS **514**, 4736. 2022
9. **Yingtian Chen**, Hui Li✉, & Mark Vogelsberger, *Effects of initial density profiles on massive star cluster formation in giant molecular clouds*, MNRAS **502**, 6157. 2021
10. **Yingtian Chen** & Bo-Qiang Ma✉, *Novel pre-burst stage of gamma-ray bursts from machine learning*, JHEAp **32**, 78. 2021

Other publications

11. Neil Ash✉, Monica Valluri, **Yingtian Chen**, & Eric F. Bell, *Stellar bars form dark matter counterparts in TNG50*, ApJ **976**, 189. 2024
12. Sarah Pearson✉, Ana Bonaca, **Yingtian Chen**, & Oleg Y. Gnedin, *Forecasting the population of globular cluster streams in Milky Way-type galaxies*, ApJ **976**, 54. 2024