

Yingtian “Bill” Chen

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

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

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

Awarded Resources

- **Co-PI**, ACCESS *Maximize* AST200017, awarded allocation ≈ 50K USD 2025 – 2026
171K SUs (≈10M CPU hours) @ TACC/Stampede3 + 256 TB @ TACC/Ranch
- **Co-PI**, ACCESS *Accelerate* AST200017, awarded allocation ≈ 30K USD 2024 – 2025
116K SUs (≈6M CPU hours) @ TACC/Stampede3 + 100 TB @ TACC/Ranch

Selected Talks

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

Teaching

• Guest Lecturer , <i>Hamiltonian Mechanics</i> , UM Ann Arbor, US Galactic Dynamics Summer Workshop	2025
• Guest Lecturer , <i>Cosmological N-body Simulations</i> , UM Ann Arbor, US ASTRO 534: The Extragalactic Universe (grad-level cosmology)	2025
• Graduate Student Instructor , UM Ann Arbor, US ASTRO 104: Alien Skies: A Tour Through the Universe ASTRO 106: Aliens ASTRO 115: Introductory Astrobiology: The Search for Life in the Universe	2021 & 2024

Services

Professional Services

• Journal Referee , A&A · ApJ · MNRAS	Since 2023
• Code Author , GC_formation_model · GC_formation_model_parallel · StarStream · mesh_illustris · prj_plotter · Dendrogram	Since 2020
• Code Contributor , ART · gala · galax · galpy	Since 2024
• Conference Session Chair , <i>DGSCS 2024</i> , UChicago Chicago, US	2024
• Conference LOC Chair , <i>Great Lakes Clusters and Streams</i> , UM Ann Arbor, US	2023
• Organizer , <i>Stellar Halos Group meeting</i> (weekly), UM Ann Arbor, US	Since 2024

University Services

• Organizer , <i>Astronomy grad lunch talk series</i> (weekly)	2024 – 2026
• Organizer , <i>Build-Your-Website workshop</i>	2025
• Organizer , <i>Astrocoffee journal club</i> (bi-weekly)	2022 – 2025
• Organizer , <i>Preliminary examination preparation club</i> (weekly)	2022 – 2025
• Chair , <i>UM Chinese astronomers networking group</i>	Since 2022
• Department Bread Baker (weekly)	2021 – 2022

Outreach Services

• Public Talk , <i>How scientists find black holes</i> , UM museum of natural history Ann Arbor, US	2025
• Public Seminar , <i>Reductionism and holism</i> , Yuexia Space seminar series Shenzhen, China	2021
• Guest Lecturer , <i>Physics Olympiad training</i> , Chengdu Jinjiang Jiaxiang Foreign Language Senior High School Chengdu, China	2017
• Public Software Author , fov_simulator	Since 2025
• Online Tutorial , <i>2D Ising model in Matlab & Python</i> , published on GitHub & Zhihu	2019
• Online Tutorial , <i>BP neural network in Matlab</i> , published on GitHub	2018

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](mailto:ognedin(at)umich.edu)
- **Dr. Monica Valluri**, Research Professor, UM. ✉[mvalluri\(at\)umich.edu](mailto:mvalluri(at)umich.edu)
- **Dr. Hui Li** (李辉), Assistant Professor, THU. ✉[hliastro\(at\)tsinghua.edu.cn](mailto:hliastro(at)tsinghua.edu.cn)

Publications

See [the complete list of publications in ADS](#)

- **15 in total (10 refereed):** citations > 150, h-index = 8
- **11 as first author (8 refereed):** citations > 140, h-index = 7

Publications as First Author or by *Supervised Students

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

Other Publications

13. Brandon Sike✉, Mateusz Ruszkowski, Oleg Y. Gnedin, **Yingtian Chen**, et al., *Resolving star cluster formation in galaxy simulations with cosmic ray feedback*, in prep. for A&A. 2025
14. Neil Ash✉, Monica Valluri, **Yingtian Chen**, & Eric F. Bell, *Stellar bars form dark matter counterparts in TNG50*, [ApJ 976, 189](#). 2024
15. 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