

Yingtian “Bill” Chen

陈颖天 · 陳穎天

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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 cosmological zoom-in simulations.
- Semi-analytical modeling of star cluster evolution in galactic environment.

See [the detailed description of my research](#)

Publications

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

- First author = 8, citations > 150, h-index = 7
- Total = 10, citations > 160, h-index = 8

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

Selected Talks

- **Invited Seminar**, *lunch talk*, Penn State | University Park, US 2025
- **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**, *Galaxy Formation seminar*, CCA, Flatiron Institute | New York, US 2024
- **Invited Talk**, UChicago | Remote 2024
- **Invited Talk**, *SMWLVS 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**, *Hamiltonian Mechanics*, UM | Ann Arbor, US 2025
Galactic Dynamics Summer Workshop
- **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 of Journal Articles**, 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**, *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 – 2026
- **Organizer**, *Build-Your-Website workshop* 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

Outreach Services

- **Public Talk**, *How scientists find black holes*, UM museum of natural history | Ann Arbor, US 2025
- **Public Seminar**, *Reductionism and holism*, Yuexia Space seminar series | Shenzhen, China 2021
- **Guest Lecturer**, *Physics Olympiad training*, Chengdu Jinjiang Jiaxiang Foreign Language Senior High School | Chengdu, China 2017
- **Public Software Author**, *fov_simulator* Since 2025
- **Online Tutorial**, *2D Ising model in Matlab and Python*, published on GitHub and Zhihu 2019
- **Online Tutorial**, *BP neural network in Matlab*, 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@umich.edu
- **Dr. Monica Valluri**, Research Professor, UM. ✉mvalluri@umich.edu
- **Dr. Hui Li** (李辉), Assistant Professor, THU. ✉hliastro@tsinghua.edu.cn

Publications

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Refereed Publications as First Author

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

Refereed Publications as Contributing Author

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

Publications Submitted or in Prep.

11. **Yingtian Chen**[✉], Oleg Y. Gnedin, Adrian M. Price-Whelan, and Colin Holm-Hansen, *StarStream: Automatic detection algorithm for stellar streams*, submitted to AAS journals. 2025
12. **Yingtian Chen**[✉], Oleg Y. Gnedin, and Adrian M. Price-Whelan, *StarStream on Gaia: stream discovery and mass loss rate of globular clusters*, in prep. for AAS journals. 2025
13. **Yingtian Chen**[✉], Oleg Y. Gnedin, Vadim A. Semenov, and Hui Li, *Simulating clustered star formation in the early Universe*, in prep. for AAS journals. 2025
14. *Colin Holm-Hansen[✉], **Yingtian Chen**, and Oleg Y. Gnedin, *Catalog of Mock Stellar Streams in Milky Way-like Galaxies*, in prep. for OJAp. 2025
15. 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

*Supervised Students