Jinning LIANG

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RESEARCH INTERESTS

Keywords: AGN feedback, galaxy formation theory, galactic dynamics, galactic chemical evolution, cosmology, numerical simulation, semi-analytical model

EDUCATION

The Kavli Institute for Astronomy and Astrophysics, Peking University Sep 2025 - Sep 2029
Ph.D. student in Physics, Advisor: Prof. Fangzhou Jiang

The Institute for Computational Cosmology, Durham University Oct 2023 - Mar 2025
STFC-funded Ph.D. student in Physics, Advisor: Prof. Cedric Lacey Oct 2023 - Sep 2024
M.Sc. in Physics received Mar 2025

School of Physics and Technology, Wuhan University Sep 2019 - Jun 2023
Bachelor of Science in Physics

- **Astronomy Class** Sep 2020 - Jun 2023
  (Selected from pool of 280 students due to outstanding performance and enthusiasm for astronomy)
- **GPA: 3.80/4.00; 90.15/100; Ranking: 1/196**
- **Core coursework and Grades:**

Fluid Mechanics (98), Thermodynamics and Statistical Physics (98), Machine Learning (96), Computational Physics (95)

The Kavli Institute for Astronomy and Astrophysics, Peking University Mar 2023 - Oct 2024
Visiting Student

Department of Astronomy, Peking University Jul 2022
CSST-Galaxies Observation Summer School Student

Shanghai Astronomical Observatory Jan 2022 - Feb 2022
Visiting Student

PUBLICATIONS (* Denotes co-first author, † Denotes corresponding author)

[1] **Jinning Liang**, Lacey. C et al., *Implementation of Variable Coupling Efficiency Model in AGN feedback*, in preparation
[2] F. Jiang†,*, **Jinning Liang*** et al., *Formation and Environmental Context of Giant Bulgeless Disk Galaxies in the Early Universe: Insights from Cosmological Simulations*, Submitted, 2025 [2504.01070]
[3] Zou. S†, Simcoe. R.A., Petitjean. P, Péroux. C, Champagne. J, Wang. F, **Jinning Liang** et al., *Disturbed cold gas in galaxy and structure formation*, Submitted, 2025 [2502.14705]
[4] **Jinning Liang**, F. Jiang†, H.J. Mo et al., *Connection between galaxy morphology and dark-matter halo structure I: a running threshold for thin discs and size predictors from the dark sector*, Submitted to MNRAS, 2024 [2403.14749]
[5] **Jinning Liang**, F. Jiang† et al., *Constrain the Dark Matter Distribution of Ultra-diffuse Galaxies with Globular-Cluster Mass Segregation: A Case Study with NGC5846-UDG1,* ApJ **964** (2024) 53 [2304.14431]
[6] **Jinning Liang**, E. Gjergo† & X. Fan, Assessing stellar yields in Galaxy chemical evolution: benchmark on observational stellar abundance patterns**,** MNRAS **522** (2023) 863 [2304.00208]
[7] E. Gjergo†, A.G. Sorokin, A. Ruth, E. Spitoni, F. Matteucci, X. Fan, **Jinning Liang** et al., *GalCEM I - A Publicly-Available Detailed Isotopic Chemical Evolution Code,* ApJS **264** (2023) 44 [2301.02257]
[8] H. Liu*, **Jinning Liang*** & J. Jia†, *Deflection and Gravitational lensing of null and timelike signals in the Kiselev black hole spacetime in the weak field limit*, Class. Quantum. Grav **39** (2022) 195013 [2204.04519]

TEACHING

PHYS2631 Stars & Galaxies, Durham University Oct 2023 - Apr 2024
Workshop Demonstrator

SCIENTIFIC OUTREACH

Celebrate Science, Durham University 2023
Educated children with basic knowledge and illustration about gravitational lensing and galaxy formation

TALKS (* Denotes invited talk)

[1] Seminar Talk, Flat Talk, Durham, UK 2024
AGN feedback by line-driven winds
[2] Workshop Talk, 20th Durham-Edinburgh eXtragalatic (DEX) Workshop, Durham, UK 2024
New morphological decomposition method and varying circularity threshold
[3] **Seminar Talk***, Shanghai Astronomical Observatory, Shanghai, China 2023
Connection between galaxy morphology and dark-matter halo structure
[4] **Seminar Talk***, Shanghai Jiaotong University, Shanghai, China 2023
Dark matter properties and its connection with galaxy morphology

[5] Seminar Talk (online), University of Arizona, Arizona, AZ, USA 2022
Globular Clusters in UDGs
[6] Conference Talk, ISM Physics and Chemistry Conference, Yichang, Hubei, China 2022
Galactic stellar abundance scatter investigated through yield analysis in galaxy chemical evolution

SELECTED HONORS AND AWARDS

Science and Technology Facilities Council Scholarship		2023
Yu Gang - Song Xiao Scholarship of Wuhan University	45/30000	2022
First-class Scholarship of Wuhan University	Top 5%	2022
MCM&ICM Finalist Award	Top 2%	2022
National Astronomical Observatories Scholarship	3/600	2021

SKILLS

Programming Languages & Software: Python (Extensively), Mathematica (Extensively), Matlab and LaTeX
Language: Mandarin (Native), English (Proficient)
Simulations & Semi-analytical model: *IllustrisTNG, EAGLE, Swift-Colibre, NuPyCEE* and *SatGen*

MENTORSHIP

[1] **Haiyang Xin**, undergraduate at Peking University since Jan 2024
Finding Milky Way catalog using galactic decomposition method (MorphDecom), in preparation
[2] **Peng Xu**, undergraduate at Tsinghua University since Mar 2024
Classifying and visualizing cosmic web with T-web method and DisPerSE, in preparation
[3] **Yalin Wu**, undergraduate at Peking University since Oct 2024
Simulating stellar streams and globular clusters in semi-analytical model, in preparation
[4] **Yiheng Tian**, undergraduate at Peking University since Dec 2024
Studying the evolution of bars quantities in IllustrisTNG, undergraduate thesis
[5] **Jianyuan Luo**, postgraduate at Peking University since Mar 2025
Finding inner mini-disk of massive galaxies at high redshift using cosmological simulations, in preparation

PROFESSIONAL REFERENCES

[1] **Prof. Fangzhou Jiang**
The Kavli Institute for Astronomy and Astrophysics, Peking University Email: fangzhou.jiang@pku.edu.cn
[2] **Prof. Cedric Lacey**
The Institute for Computational Cosmology, Durham University Email: cedric.lacey@durham.ac.uk
[3] **Dr. Sownak Bose**
The Institute for Computational Cosmology, Durham University Email: sownak.bose@durham.ac.uk
[4] **Prof. Houjun Mo**
Department of Astronomy, University of Massachusetts Email: hjmo@umass.edu
[5] **Prof. Xilong Fan**
School of Physics and Technology, Wuhan University Email: xilong.fan@whu.edu.cn