Qingyang Li

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EDUCATION

Ph.D | *Astronomy*   Sept. 2018 – June. 2024
Shanghai Jiao Tong University, Supervisor: Xiaohu Yang, Jiaxin Han.

Visiting student | *Astronomy*   Dec. 2022 – June. 2023
The University of Edinburgh, Advisor: Romeel Davé, Weiguang Cui

Bachelor | *Physics*   Sept. 2014 – June. 2018
Sichuan University

RESEARCH AND TECHNIQUES

Galaxy clusters:
- **Intracluster medium**: Study the baryon physical profiles [1, 2]
- **Cluster dynamics**: Estimate the mass of cluster halos [3];
  Investigate the importance of dynamical features [4]
- **Group finding**: Construct group and protocluster candidate catalog [5]

High-redshift galaxies: Estimate the physical properties of high-redshift galaxies

Techniques: Machine learning (Random Forest and Convolutional Neural Network)

TALKS AND PRESENTATIONS

SIMBA collaboration meeting	May. 2023
ESA/ESAC Galaxy Cluster Mass meeting	Sept. 2021
The Three Hundred collaboration meeting	July. 2021
Annual meeting of Chinese Astronomical Society	Oct. 2020
The Three Hundred collaboration meeting	July. 2020

HONORS AND AWARDS

China National Scholarship for Ph.D student	2022
"Yangyang" astronomy scholarship	2022
Outstanding student award of particle physics and cosmology key laboratories	2021, 2020
Ruiyuan - Sequoia Talent Development Fund Scholarship	2021
Shanghai Jiaotong University Oppotech Scholarship	2020

TEACHING EXPERIENCE

University physics   Spring 2019
Teaching Assistant, Department of Physics and Astronomy   Shanghai Jiao Tong University

Introduction of astrophysics   Spring 2020
Teaching Assistant, Department of Physics and Astronomy   Shanghai Jiao Tong University

University physics experiment   Fall 2020
Teaching Assistant, Department of Physics and Astronomy   Shanghai Jiao Tong University

PUBLICATIONS

First author

1. Qingyang Li, Weiguang Cui, Xiaohu Yang, Romeel Davé, Elena Rasia, Stefano Borgani, Meneghetti Massimo, Alexander Knebe, Klaus Dolag, and Jack Sayers. THE THREE HUNDRED Project: the evolution of physical baryon profiles. *MNRAS*, 523(1):1228–1246, July 2023

2. Qingyang Li, Xiaohu Yang, Chengze Liu, Yipeng Jing, Min He, Jia-Sheng Huang, Y. Sophia Dai, Marcin Sawicki, Stephane Arnouts, Stephen Gwyn, Thibaud Moutard, H. J. Mo, Kai Wang, Antonios Katsianis, Weiguang Cui, Jiaxin Han, I. Non Chiu, Yizhou Gu, and Haojie Xu. Groups and Protocluster Candidates in the CLAUDS and HSC-SSP Joint Deep Surveys. *ApJ*, 933(1):9, July 2022

3. Qingyang Li, Jiaxin Han, Wenting Wang, Weiguang Cui, Federico De Luca, Xiaohu Yang, Yanrui Zhou, and Rui Shi. What to expect from dynamical modelling of cluster haloes - II. Investigating dynamical state indicators with Random Forest. *MNRAS*, 514(4):5890–5904, August 2022

4. Qingyang Li, Jiaxin Han, Wenting Wang, Weiguang Cui, Zhaozhou Li, and Xiaohu Yang. What to expect from dynamical modelling of cluster haloes - I. The information content of different dynamical tracers. *MNRAS*, 505(3):3907–3922, August 2021

5. Qingyang Li, Weiguang Cui, Xiaohu Yang, Elena Rasia, Romeel Dave, Marco De Petris, Alexander Knebe, John A. Peacock, Frazer Pearce, and Gustavo Yepes. The Three Hundred project: the stellar and gas profiles. *MNRAS*, 495(3):2930–2948, July 2020

Co-author

1. Yun-Liang Zheng, Xiaohu Yang, Min He, Shi-Yin Shen, and Xuejie Li, **Qingyang Li**. Measuring the X-ray luminosities of DESI groups from eROSITA Final Equatorial-Depth Survey - I. X-ray luminosity-halo mass scaling relation. *MNRAS*, 523(4):4909–4922, August 2023

2. Kai Wang, Yangyao Chen, **Qingyang Li**, and Xiaohu Yang. Late-formed haloes prefer to host quiescent central galaxies - I. Observational results. *MNRAS*, 522(2):3188–3200, June 2023

3. Zitong Wang, Feng Shi, Xiaohu Yang, **Qingyang Li**, Yanming Liu, and Xiaoping Li. DarkAI: I. Mapping the large-scale density field of dark matter using AI. *arXiv e-prints*, page arXiv:2305.11431, May 2023

4. Eric J. Baxter, Shivam Pandey, Susmita Adhikari, Weiguang Cui, Tae-hyeon Shin, **Qingyang Li**, and Elena Rasia. The impact of halo concentration on the Sunyaev Zel'dovich effect signal from massive galaxy clusters. *arXiv e-prints*, page arXiv:2304.08731, April 2023

5. Jiaqi Wang, Xiaohu Yang, Jun Zhang, Hekun Li, Matthew Fong, Haojie Xu, Min He, Yizhou Gu, Wentao Luo, Fuyu Dong, Yirong Wang, **Qingyang Li**, Antonios Katsianis, Haoran Wang, Zhi Shen, Pedro Alonso Vaquero, Cong Liu, Yiqi Huang, and Zhenjie Liu. Halo Properties and Mass Functions of Groups/Clusters from the DESI Legacy Imaging Surveys DR9. *ApJ*, 936(2):161, September 2022

6. Rui Shi, Wenting Wang, Zhaozhou Li, Jiaxin Han, Jingjing Shi, Vicente Rodriguez-Gomez, Yingjie Peng, and **Qingyang Li**. A machine learning approach to infer the accreted stellar mass fractions of central galaxies in the TNG100 simulation. *MNRAS*, 515(3):3938–3955, September 2022

7. Weiguang Cui, Romeel Dave, Alexander Knebe, Elena Rasia, Meghan Gray, Frazer Pearce, Chris Power, Gustavo Yepes, Dhayaa Anbajagane, Daniel Ceverino, Ana Contreras-Santos, Daniel de Andres, Marco De Petris, Stefano Ettori, Roan Haggar, **Qingyang Li**, Yang Wang, Xiaohu Yang, Stefano Borgani, Klaus Dolag, Ying Zu, Ulrike Kuchner, Rodrigo Cañas, Antonio Ferragamo, and Giulia Gianfagna. THE THREE HUNDRED project: The GIZMO-SIMBA run. *MNRAS*, 514(1):977–996, July 2022

8. Xiaohu Yang, Haojie Xu, Min He, Yizhou Gu, Antonios Katsianis, Jiacheng Meng, Feng Shi, Hu Zou, Youcai Zhang, Chengze Liu, Zhaoyu Wang, Fuyu Dong, Yi Lu, **Qingyang Li**, Yangyao Chen, Huiyuan Wang, Houjun Mo, Jian Fu, Hong Guo, Alexie Leauthaud, Yu Luo, Jun Zhang, and Ying Zu. An Extended Halo-based Group/Cluster Finder: Application to the DESI Legacy Imaging Surveys DR8. *ApJ*, 909(2):143, March 2021