



Qinglin Ma

DEPARTMENT OF ASTRONOMY · TSINGHUA UNIVERSITY
Tsinghuayuan Street, Haidian District, Beijing, China
☎ (+86) 136-0256-2131 | ✉ maql21@mails.tsinghua.edu.cn

Education

Department of Physics and Astronomy, Sun Yat-sen University

BACHELOR OF SCIENCE IN PHYSICS (ADVISOR: XIAODONG LI)

- Thesis: Dependence of dark matter halo boundary on the dark halo mass

Guangzhou, China

Sept. 2017 - Jun. 2021

Department of Astronomy, Tsinghua University

PHD STUDENT IN ASTRONOMY (ADVISOR: CHENG LI)

- Thesis: Evolution of the dark matter halo and its impact on the galaxy formation

Beijing, China

Sept. 2021 -

Research Interests

- The interactions between the large-scale structure and halo/galaxies.
- The formation and evolution of the dark matter halo and its coevolution with galaxy.
- Connecting galaxies to dark matter halos using spectroscopic survey.

Research Experience

Lopsided and Bulging Distribution of Satellites around Paired Central Galaxies.

LARGE-SCALE STRUCTURE

- Using the simulation, mock catalog and observation (SDSS/DR7) data to study the spatial distribution of the satellites around the paired central halo/galaxies. (Ma, Li, Guo et.al 2025, submitted to APJ; Guo, Ma, Li 2025, submitted to APJ)

The anisotropic assembly bias of dark matter halo

LARGE-SCALE STRUCTURE; HALO FORMATION AND EVOLUTION

- Investigating the relation between the halo alignment and halo secondary properties, and its relation to the large-scale tidal anisotropy. (Ma, Li 2025, to be submitted)

Two-phase formation of galaxies: the coevolution between galaxies and dark matter halos in FIRE-2 simulations

HALO-GALAXY CONNECTION; GALAXY FORMATION

- Investigating the multiple physical mechanisms of the evolution of the galaxy morphological type in FIRE-2 simulations. (Ma et al. 2025, to be submitted)

Can halo spin explain the formation of the Ultra diffuse galaxies?

HALO-GALAXY CONNECTION; GALAXY FORMATION

- Observational evidence for the size of galaxies and the spin of dark matter halos. (Ma et al. 2025, in prep)

Skills

- C++, Fortran, Python
- MPI, OpenMP
- Latex

Honors & Awards

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|------|---|------------------|
| 2020 | 1st , Comprehensive Scholarships | Guangzhou, China |
| 2021 | Excellent Graduate Student , of Sun Yat-sen University | Guangzhou, China |
| 2022 | 2nd , Comprehensive Scholarships | Beijing, China |
| 2024 | Excellent Oral presentation , in the 26th Guo Shoujing Symposium | Nanjing, China |
| 2024 | 2nd , Comprehensive Scholarships | Beijing, China |

Presentation

2nd Shanghai Assembly on Cosmology and Structure Formation

ORAL PRESENTATION

- Dependence of dark matter halo assembly bias on halo definition and orientation

Shanghai, China

Oct. 2023

Resolving Galaxy Ecosystems Across All Scales

LIGHTNING TALK AND POSTER

- Dependence of dark matter halo assembly bias on halo definition and orientation

Hongkong, China

Dec. 2023

The 26th Guo Shoujing Symposium of the Chinese Astronomical Society in 2024

ORAL PRESENTATION

- Dependence of dark matter halo assembly bias on halo definition and orientation

Nanjing, China

Mar. 2024

2024 PKU International PhD Student Forum on the Frontiers of Modern Astronomy

ORAL PRESENTATION

- Lopsided and Bulging Distribution of Satellites around Paired Central Galaxies

Beijing, China

Dec. 2024

PFS collaboration meeting

LIGHTNING TALK AND POSTER

- Dependence of dark matter halo assembly bias on halo definition and orientation

Tokyo, Japan

Jan. 2025

Expanding the boundaries of dark matter halo

ORAL PRESENTATION

- The anisotropic secondary bias of dark matter haloes in N-body simulations and its dependence on the halo definition

Shanghai, China

Mar. 2025

Dancing in the Dark: When Galaxies Shape Galaxies.

POSTER

- Lopsided and Bulging Distribution of Satellites around Paired Central Galaxies

Dolomites, Italy

Jul. 2025

The hundred-billion-year evolution law of galaxy ecosystems

LIGHTNING TALK AND POSTER

- Two-phase formation of galaxies: the coevolution between galaxies and dark matter halos in FIRE-2 Simulations

Beijing, China

Jul. 2025

Teaching

2022 Fall **Teaching assistant**, “Observational Cosmology: from the Solar System to the Distant Universe