

# XIANGHAN CUI

National Astronomical Observatories, CAS  
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## EDUCATION

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2019.09 – present      University of Chinese Academy of Sciences (UCAS), China  
*PhD student*, National Astronomical Observatories (NAOC), Astronomy and Astrophysics  
Advisors: Prof. Di Li and Prof. Chengmin Zhang

2017.03 – 2018.06      Huazhong University of Science and Technology (HUST), China  
*Minor degree*, School of Management, Business Administration

2015.09 – 2019.06      Wuhan University of Technology (WUT), China  
*Major B.S. degree*, School of Natural Sciences, Department of Physics, Optoelectronic Information Science and Engineering

## RESEARCH INTERESTS

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- Radio transient (fast radio burst): statistical and population analysis, physical mechanism
- Pulsar and neutron star: statistical and population analysis, evolution model

## SELECTED AWARDS

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- 2022, Scholarship of the Chinese Astronomical Society, Chinese Astronomical Society
- 2021, National Scholarship (for Ph.D. students), Ministry of Education of the People's Republic of China
- 2021, ACAMAR 7: People's Choice Poster Award, China-Australia research centre
- 2020, Merit Student, UCAS

## EXPERIENCE

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### Capacities

- 5 first author journal publications and 2 co-author papers with significant contribution
- Statistical method in astronomy and Python-based code programming

### Teaching Assistant

- Graduate course at UCAS: High Energy Astrophysics and Gravitational Wave (070200M02048H), Prof. Chengmin Zhang, 2021 & 2022

### Professional Service

- Referee for MNRAS, 2022

### First Author Publications

1. **Cui X.H.**, Zhang C.M., Li D., et al., 2022, [Ap&SS, 367, 66](#).  
Luminosity distribution of fast radio bursts from CHIME/FRB Catalog 1 by means of the updated Macquart relation
2. **Cui X.H.**, Zhang C.M., Li D., et al., 2021, [MNRAS, 508, 279](#).  
Statistical tests of young radio pulsars with/without supernova remnants: implying two origins of neutron stars
3. **Cui X.H.**, Zhang C.M., Wang S.Q., et al., 2021, [RAA, 21, 211](#).  
Statistical properties of fast radio bursts elucidate their origins: magnetars are favored over gamma-ray bursts
4. **Cui X.H.**, Zhang C.M., Wang S.Q., et al., 2021, [MNRAS, 500, 3275](#).  
Fast radio bursts: do repeaters and non-repeaters originate in statistically similar ensembles?
5. **Cui X.H.**, Wang C.L., Jia X.T., 2019, [JOSAA, 36, 115](#).  
Nonparaxial propagation of vector vortex beams diffracted by a circular aperture

### Co-author Publications

1. Zhu Y.H, Niu C.H., **Cui X.H.**, et al., 2023, [Universe, 9, 251](#).  
Do Multi-Structural One-Off FRBs Trace Similar Cosmology History with Repeaters?
2. Yang Y.Y., Zhang C.M., Li D., et al., 2023, [MNRAS, 521, 4669](#).  
Investigating the distribution of double neutron stars and unconventional component mass
3. Zhang C.M., **Cui X.H.**, Li D., et al., 2022, [Universe, 8, 628](#).  
Evolution of Spin Period and Magnetic Field of the Crab Pulsar: Decay of the Braking Index by the Particle Wind Flow Torque
4. Zhang J.W., Zhang C.M., Li D., et al., 2022, [PASP, 134, 114201](#).  
Revisiting the Magnetic Field Distribution of Normal Pulsars: Implications for the Multiple Origins for Neutron Stars
5. Zhang J.W., Zhang C.M., Li D., et al., 2021, [PRD, 104, 103010](#).  
Gaussian mixture models of the total mass distribution of stellar black holes from LIGO-Virgo GWTC-2: Implications on the origin of GW190521
6. Zhang J.W., Zhang C.M., Li D., et al., 2021, [CPB, 30, 120401](#).  
Simulation of the gravitational wave frequency distribution of neutron star-black hole mergers