

# CHEN, ZHAOTING

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## EDUCATION

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- Ph.D. in Astrophysics** (pending) 2020 - present  
Jodrell Bank Centre for Astrophysics, University of Manchester, United Kingdom  
Supervisor: Dr. Laura Wolz & Prof. Richard Battye
- Master of Science by Research in Astronomy and Astrophysics (Distinction)** 2019 - 2020  
Jodrell Bank Centre for Astrophysics, University of Manchester, United Kingdom.  
Supervisor: Dr. Laura Wolz
- Bachelor of Science in Physics** 2015 - 2019  
School of the Gifted Young, University of Science and Technology of China, P.R. China.

## EXPERIENCE

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- Research Assistant** 2017 - 2019  
CAS Key Laboratory for Research in Galaxy and Cosmology, USTC.  
Supervisor: Prof. Yi-Fu Cai  
Project: Forecasting Constraints on Dipole Asymmetry during EoR. Co-supervised by Prof. Yi Mao from Tsinghua University.
- Teaching Assistant** 2018  
Department of Astronomy, USTC.  
Course: Space and Time (Introductory Gravitational Physics)
- Research Assistant** 2018 - 2019  
National Astronomical Observatories of China, Chinese Academy of Science.  
Supervisor: Prof. Yidong Xu, Prof. Yougang Wang and Prof. Xuelei Chen  
Project: Morphology of Reionization in Island Model.
- Visitor** 2019  
Kavli Institute for the Physics and Mathematics of the Universe, University of Tokyo.  
Invited by Dr. Wentao Luo  
Project: Weak Lensing in Minimal  $f(T)$  gravity. Also with Prof. Yi-Fu Cai and Prof. Manos Saridakis.
- Visitor** 2019  
Institute for Astronomy, Stockholm University  
Invited by Prof. Garrelt Mellema  
Project: Ionizing Background during Epoch of Reionisation. Also with Dr. Sambit Giri.
- Teaching Assistant** 2020-  
Department of Physics and Astronomy, University of Manchester.  
Course: PHYS10071 Mathematics 1; PHYS10191 Introduction to Astrophysics and Cosmology; PHYS10352 Properties of Matter; PHYS10372 Mathematics 2.

## PUBLICATION

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- [5] **Z. Chen**, L. Wolz, M. Spinelli and S. G. Murray, Extracting H<sub>I</sub> Astrophysics from Interferometric Intensity Mapping, *Mon.Not.Roy.Astron.Soc.* 502 (2021) 4, 5259–5276. arXiv: 2010.07985
- [4] S. G. Murray, B. Diemer and **Z. Chen**, TheHaloMod: An online calculator for the halo model, *submitted to Astronomy and Computing*. arXiv: 2009.14066
- [3] **Z. Chen**, W. Luo, Y.-F. Cai, and E. Saridakis, New test on general relativity and  $f(T)$  torsional gravity from galaxy-galaxy weak lensing surveys, *Phys. Rev. D* 102 (2020), 104044. arXiv: 1907.12225

- [2] B. Li, **Z. Chen**, Y.-F. Cai, and Y. Mao, Testing the scale-dependent hemispherical asymmetry with the 21-cm power spectrum from the epoch of reionization, *Mon.Not.Roy.Astron.Soc.* 487 (2019) 4, 5564-5571. arXiv: 1904.04683
- [1] **Z. Chen**, Y. Xu, Y. Wang and X. Chen, Stages of Reionization as revealed by the Minkowski Functionals, *Astrophys.J.* 885 (2019) 23. arXiv: 1812.10333

## RESEARCH INTERESTS

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Intensity Mapping. It's the main focus of my PhD. I'm a member of the SKA cosmology group working on the theory side of it.

Cosmic Reionisation. I'm mainly interested in the morphology of Cosmic Reionisation and how to use it to interpret semi-analytical models of EoR.

Weak Lensing. I'm mainly interested in using weak lensing to constrain modified gravity.

Astrophysical Computing. I work a bit on development of `halomod` and `IslandFAST`.

## TALKS

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|---|-------------------|
| 2. <b>Extracting HI Astrophysics from Interferometric Intensity Mapping</b> | 03/2021           |
| 2021 SKA Science Conference   | SKA Organisation  |
| 1. <b>Halo Model, Interferometric Intensity Mapping and HI Shot Noise</b>   | 09/2020           |
| SWIFAR Colloquium   | Yunnan University |

## LANGUAGES

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I am interested in the phonology of Sinitic languages and speak a few myself. A list of languages I speak, in the order of my proficiency:

- Huzhounese. It's a dialect of Taihu Wu which belongs to the linguistic group of Wu Chinese. Native.
- Standard Mandarin. Native.
- English. Fluent.
- Shanghainese. Fluent.
- Standard Cantonese. Intermediate.
- Amoy Hokkien. Amateur.