XIAOSHENG ZHAO

zhaoxs18@mails.tsinghua.edu.cn ◇ Xiaosheng-Zhao.github.io
+86 18800139808 ◇ Beijing, China

EDUCATION

Tsinghua University Sep 2018 -
PhD in Astronomy

Wuhan University Sep 2014 - Jun 2018
BS in Physics

RESEARCH INTERESTS

I study the 21cm cosmology with the help of artificial intelligence (AI). Currently I apply different statistical methods to maximally extract the information from future 21 cm signal. My research interests are connecting the cosmological simulations and observations, combining multi-modal astrophysical information for scientific problem, as well as accelerating the automatic knowledge discovery with using modern statistics and machine learning in the era of big data. I plan to develop accurate and flexible cosmological and astrophysical emulators, combining multi-modal information (morphology, light curves, and spectra) to understand the galaxy formation and evolution, and flexble "cosmology-aware" symbolic algorithm to automatically find better model of our universe.

AWARDS

AMD scholarship 2020 - 2021
National scholarship 2015 - 2016

MENTORING & TEACHING EXPERIENCE

Teaching Assistant in undergraduate *Physics* course. Feb - Jun 2019

REFERENCES

Prof. Yi Mao, Tsinghua University ymao@mail.tsinghua.edu.cn

TALKS & PRESENTATIONS

SAZERAC 21cm 2022 Mar 2022
Recorded talk: *Implicit Likelihood Inference of Reionization Parameters from the 21 cm Power Spectrum* *Virtual*

SAZERAC SIP, learning the high-redshift universe Feb 2022
Contributed talk: *Simulation Based Inference of Reionization Parameters From 3D Tomographic 21 cm Lightcone Images* *Virtual*

SKA CD/EoR Science Telecon July 2021
Contributed talk: *Simulation Based Inference of Reionization Parameters From 3D Tomographic 21 cm Images* *Virtual*

HERA telecon Jun 2021
Contributed talk: *Simulation Based Inference of Reionization Parameters From* *UC, Berkeley*

3D Tomographic 21 cm Images

'Barefoot Reionization': Exploring the First Billion Years of the Universe July 2019
Poster sparkler talk: *The 21-cm cosmology with 3D CNN* *U of Melbourne*

SERVICE

I organized the machine learning session in astronomy department. Mar 2021 - Mar 2022

I co-organized the joint machine learning session among Oct 2021 - Mar 2022
DoA (Tsinghua), JBCA (Manchester) and SKAO.

SKILLS

Coding languages: Python, C, html
General: Data science and Machine learning application with Pandas, Scikit-learn, Tensorflow and Pytorch.

PUBLICATIONS

Implicit Likelihood Inference of Reionization Parameters from the 21 cm Power Spectrum
Xiaosheng Zhao; Yi Mao; Benjamin D. Wandelt
2022, ApJ, 933, 236

Simulation-Based Inference of Reionization Parameters From 3D Tomographic 21 cm Lightcone Images.
Xiaosheng Zhao; Yi Mao; Cheng Cheng ; Benjamin D. Wandelt
2022, ApJ, 926, 151

EXTRA

Project of *Big Data Ability Enhancement* Sep 2021 - July 2022
Courses: *e.g. big data system, big data analysis, big data application* *Tsinghua University*
(WeChat big data challenge: multi-modal short-video classification)

CSST summer school July 2022
Got certification of data processing practice *Peking University*