



JIACHEN BAI

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iNSPIRE: Jiachen Bai

EDUCATION

Bachelor of Science | *Astronomy*

GPA: 3.8/4 | School of Physics and Astronomy, Beijing Normal University (BNU)

Sep. 2021 – Jul. 2025

Beijing, China

WORK EXPERIENCE

Observational Astrophysics Internship

Observatorio Astrofísico de Javalambre, CEFCA

- Using observational data to determine properties of clusters and variable stars.

Sep 2023 – Oct 2023

Teruel, Spain

Undergraduate Research Project (Group Leader)

School of Physics and Astronomy, BNU

- Constraining modified gravity with CC, SN, BAO, CMB.

May 2023 – May 2024

Beijing, China

Cosmology Internship

National Astronomical Observatories, CAS

- Constraining modified gravity and massive neutrinos using CMB and weak lensing.

Jun 2024 – Aug 2024

Beijing, China

RESEARCH INTERESTS

Dark Energy

I am interested in finding alternative theories to the Λ CDM Model that better explain cosmological observations.

Modified Gravity

I'm interested in testing modified gravity models using cosmological data.

AI for Astronomy

I'm interested in how to use such powerful tools to help us understand the Universe better.

The Large scale Structure of the Universe

I'm interested in extracting new information through simulations and observations of the LSS.

Extra Dimensional Theories

I'm interested in how to find evidence for extra dimensional models through cosmological observations.

PUBLICATIONS

FREmu: Power Spectrum Emulator for $f(R)$ Gravity

Jiachen Bai, Jun-Qing Xia

arXiv: 2405.05840, Published in ApJ

HONORS AND AWARDS

The BNU First Prize Scholarship (15%)

Beijing Normal University

Sep 2022

The BNU First Prize Scholarship (15%)

Beijing Normal University

Sep 2023

Most Excellent Undergraduate Research Project (10%)

Beijing Normal University

May 2024

SKILLS

Languages: Chinese (Native), English (IELTS: TBD, CET6: 575)

Programming: Python, Fortran, MATLAB, Mathematica

Document Creation: Microsoft Office Suite, LaTeX, Markdown