YANHUI YANG

yyang440@ucr.edu ◇ https://astro-yyh.github.io

EDUCATION

PhD Program in Physics University of California, Riverside — Sep 2022–current
Concentration in Astronomy
Overall GPA: 4.00/4.00

BS in Astronomy University of Science and Technology of China — July 2021
Wang Shouguan Talent Program in Astronomy
Thesis: *Hydrodynamic simulations of turbulent mixing layers of galactic winds*
Overall GPA: 3.74/4.30, Major GPA: 3.93/4.30 (Physics & Astronomy courses)

RESEARCH INTERESTS

Cosmology: large-scale-structure, dark matter, dark energy, cosmological emulation; Astrophysics: galaxy formation and evolution, circumgalactic medium, turbulent mixing layers

APPOINTMENTS

Graduate Student Researcher, Advisor: Simeon Bird (UCR) — Fall 2023–current
Teaching assistant in *General Physics laboratory 2LC*, Coordinator: Jonathan Eldridge (UCR) — Winter–Spring 2023
Research assistant, Advisor: Suoqing Ji (SHAO) — Spring 2022

REFERENCES

Simeon Bird (sbird@ucr.edu)
Associate Professor, Department of Physics and Astronomy, University of California, Riverside

Suoqing Ji (sqji@fudan.edu.cn)
Associate Professor, Department of Physics, Fudan University

Philip F. Hopkins (phopkins@caltech.edu)
Professor, The Division of Physics, Mathematics and Astronomy, California Institute of Technology

Xiaobo Dong (xbdong@ynao.ac.cn)
Research Professor, Yunnan Observatories, Chinese Academy of Sciences

MENTORSHIP & SUPERVISION

Undergraduate students (co-mentored with Prof. Simeon Bird): Mark Achenbach (UH Mānoa), Michael Padilla (UCR), Mohak Bhattacharya (UCR)

SKILLS

Programming languages	C (gsl), C++ (boost, CUDA), Python (torch, mpi4py, pymc, pandas, numpy, matplotlib, yt, bigfile, gpy, etc.), Bash, Fortran, HTML, CSS, Markdown, LaTeX
Simulation codes	MP-Gadget, CLASS, FLASH, GADGET-3, RAMSES, AREPO
Tools	Git, Mathematica, Origin, Gnuplot, IDL, ds9, VS Code

VISITS & ADDITIONAL TRAINING

TACC Open Hackathon, Texas Advanced Computing Center, UT Austin — Oct 2024

The 2023 Machine Learning Institute, TACC, UT Austin — June 2023

Shanghai Astronomical Observatory, Chinese Academy of Sciences — Jan. 2020

Five-hundred-meter Aperture Spherical Telescope (FAST) — July 2019

AWARDS & HONORS

Dean's Distinguished Fellowship (University of California, Riverside) — 2022

NAOC Scholarship (National Astronomical Observatories, Chinese Academy of Sciences) — 2020

National Encouragement Scholarship — 2020

Outstanding Student Scholarship (Grade 3) — 2019

Zhang Zongzhi Sci-Tech Scholarship — 2018

PRESENTATIONS

Nonlinear Matter Power Spectrum Emulation beyond ΛCDM for Next-Generation Surveys (poster)
Cosmic Cartography with Roman 2025, STScI, Baltimore, MD — July 2025

10D emulation for the nonlinear matter power spectrum beyond ΛCDM based on Goku
Cosmology from Home 2025 — July 2025

Goku: A 10-parameter simulation suite for cosmological emulation
Physics and Astronomy Student Seminar, University of California, Riverside — March 2025
Frontera User Meeting 2024, TACC, University of Texas, Austin — Aug 2024

Radiative turbulent mixing layers at high Mach numbers
Shanghai Astronomical Observatory, Chinese Academy of Sciences — May 2022

OUTREACHES

Physics Fun Expedition: A Science Outreach Program for Township Middle Schools — July 2019

PUBLICATIONS

Yanhui Yang, Simeon Bird, Ming-Feng Ho, and Mahdi Qezlou. Ten-dimensional neural network emulator for the nonlinear matter power spectrum. *arXiv e-prints*, art. arXiv:2507.07177, July 2025a. doi: 10.48550/arXiv.2507.07177.

Yanhui Yang, Simeon Bird, Ming-Feng Ho, and Mahdi Qezlou. Design and optimization of neural networks for multifidelity cosmological emulation. *arXiv e-prints*, art. arXiv:2507.07184, July 2025b. doi: 10.48550/arXiv.2507.07184.

Yanhui Yang, Simeon Bird, and Ming-Feng Ho. Ten-parameter simulation suite for cosmological emulation beyond ΛCDM. *Phys. Rev. D*, 111(8):083529, April 2025c. doi: 10.1103/PhysRevD.111.083529.

Yanhui Yang and Suoqing Ji. Radiative turbulent mixing layers at high Mach numbers. *MNRAS*, 520(2):2148–2162, April 2023. doi: 10.1093/mnras/stad264.

Only lead-author papers are listed above. Please refer to NASA/ADS (orcid:0000-0001-6221-6024) for a complete list of my publications.