Hui Peng

📇 Born in August 1999 📍 800 Dongchuan Road, Shanghai, China
✉ pengh.me@gmail.com 🆔 0000-0003-3929-3229
🌐 penghui-hub.github.io PengHui-hub

Research interests

|		
Cosmology	🔖	Galaxy clustering, Weak lensing, Large-scale structure of Universe.
Observations	🔖	Calibration of photometric redshifts, slitless spectroscopic redshift interloper contamination, magnification bias and fast radio burst host/IGM DM.
Astrostatistics	🔖	Redshift calibration, Non-negative matrix factorization, Bayesian inference, Hierarchical modeling, MCMC sampling.

Education

2020 – present 🔖 **Shanghai Jiao Tong University**
Ph.D. Candidate in Astronomy
Advisor: Prof. Yu Yu

2016 – 2020 🔖 **Nanjing University of Aeronautics and Astronautics**
B.E. Space Science and Technology

Publications

I have three first-author publications and one additional contribution. Please see more details on *Astrophysics Data System (ADS)*.

1 **H. Peng** and Y. Yu, "Redshift Distributions of Fast Radio Bursts Inferred Using Clustering in Dispersion Measure Space," *The Astrophysical Journal*, vol. 982, no. 2, 124, p. 124, Apr. 2025. 🔗 DOI: 10.3847/1538-4357/adbbda. arXiv: 2503.18604 [astro-ph.CO].

2 **H. Peng** and Y. Yu, "Reconstructing redshift distributions with photometric galaxy clustering," *Journal of Cosmology and Astroparticle Physics*, vol. 2024, no. 10, 025, p. 025, Oct. 2024. 🔗 DOI: 10.1088/1475-7516/2024/10/025. arXiv: 2406.04407 [astro-ph.CO].

3 **H. Peng** and Y. Yu, "Precise self-calibration of interloper bias in spectroscopic surveys," *Monthly Notices of the Royal Astronomical Society*, vol. 526, no. 1, pp. 820–829, Nov. 2023. 🔗 DOI: 10.1093/mnras/stad2808. arXiv: 2305.10487 [astro-ph.CO].

4 **H. Peng**, H. Xu, L. Zhang, Z. Chen, and Y. Yu, "Self-calibration of photometric redshift scatter from DECaLS DR8 power spectrum and validation with simulated catalogues," *Monthly Notices of the Royal Astronomical Society*, vol. 516, no. 4, pp. 6210–6224, Nov. 2022. 🔗 DOI: 10.1093/mnras/stac2713. arXiv: 2203.14609 [astro-ph.CO].

5 H. Xu, P. Zhang, **H. Peng**, *et al.*, "Using angular two-point correlations to self-calibrate the photometric redshift distributions of DECaLS DR9," *Monthly Notices of the Royal Astronomical Society*, vol. 520, no. 1, pp. 161–179, Mar. 2023. 🔗 DOI: 10.1093/mnras/stad136. arXiv: 2209.03967 [astro-ph.CO].

Skills

Languages	▌	English, Chinese.
Coding	▌	Python, Fortran, pipeline development, …
Misc.	▌	Academic research, teaching, training, consultation.

Selected Awards

2024	▌	**Yangyang Astronomy Award**, 40000 CNY.
2023	▌	**Youruipu Award**, 5000 CNY.

Seminar Talks and Presentations

2024	▌	**DESI Summer Collaboration Meeting** Title: "Self-calibrating photometric redshift in DESI" (Online talk) *As lead on DESI Project 385: "Self-calibrating photometric redshift scatter in DESI"*
	▌	**Annual Conference of the Chinese Astronomical Society** Title: "Reconstructing redshift distributions with photometric galaxy clustering" (Poster)
	▌	**China Space Station Telescope Science Annual Conference** Title: "Self-calibration of interloper bias in slitless spectroscopic surveys" (Talk)
2023	▌	**Gravitational Lensing Working Conference** Title: "Calibrating redshift scatter in photometric surveys and interloper bias in spectroscopic surveys" (Talk)
	▌	**The 25th Guo Shoujing Symposium of the Chinese Astronomical Society and 2023 Seminar on the Frontiers of Galactic Cosmology** Title: "Self-calibrating redshift bias in surveys" (Poster)
	▌	**Gravitational Lensing Spring Conference** Title: "Implementation of self-calibration method in surveys" (Talk)
2022	▌	**Cosmology with Weak Lensing: Beyond the Two-point Statistics** Title: "Self-calibration of photometric redshift scatter from DECaLS DR8 power spectrum and validation with simulated catalogues" (Online talk)

References

👥 Name	🏛 Institution	✉ Contact
Prof. Yu Yu	Shanghai Jiao Tong University	yuyu22@sjtu.edu.cn
Prof. Pengjie Zhang	Shanghai Jiao Tong University	zhangpj@sjtu.edu.cn
Prof. Huanyuan Shan	Shanghai Astronomical Observatory	hyshan@shao.ac.cn