









# Yuxuan Yuan

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 Yuxuan's website

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 yuxuan

## Education

- 2021 - 2025  **Ph.D., University of Cambridge** in astrophysics  
Thesis title: *Ly $\alpha$  emission as a sensitive probe of EoR: the role of feedback, mergers and IGM damping*
- 2020-2021  **Honours Australian National University** in astrophysics.  
Thesis title: *The observable properties of cool winds from galaxies, AGN, and star clusters - II. Multiphase wind in M82.*
- 2016-2020  **Bachelor Australian National University** in physics and astrophysics.

## Research Publications




### First author papers

- 1 Yuan, Y., Martin-Alvarez, S., Haehnelt, M. G., Garel, T. & Sijacki, D. Ly $\alpha$  emission as a sensitive probe of feedback-regulated LyC escape from dwarf galaxies. *MNRAS* **532**, 3643–3668. arXiv: 2401.02572 [astro-ph.GA] (Aug. 2024).
- 2 Yuan, Y. *et al.* Extended red wings and the visibility of reionization-epoch Lyman- $\alpha$  emitters. *arXiv e-prints*, arXiv:2412.07970. arXiv: 2412.07970 [astro-ph.GA] (Dec. 2024).
- 3 Yuan, Y., Krumholz, M. R. & Martin, C. L. The observable properties of cool winds from galaxies, AGN, and star clusters - II. 3D models for the multiphase wind of M82. *MNRAS* **518**, 4084–4105. arXiv: 2204.05006 [astro-ph.GA] (Jan. 2023).
- 4 Yuan, Y., Krumholz, M. R. & Burkhardt, B. Understanding biases in measurements of molecular cloud kinematics using line emission. *MNRAS* **498**, 2440–2455. arXiv: 2007.13488 [astro-ph.GA] (Oct. 2020).

### Non first author papers





- 1 Dome, T., Martin-Alvarez, S., Tacchella, S., Yuan, Y. & Sijacki, D. Increased Burstiness at High Redshift in Multi-Physics Models Combining Supernova Feedback, Radiative Transfer and Cosmic Rays. *arXiv e-prints*, arXiv:2410.00113. arXiv: 2410.00113 [astro-ph.GA] (Sept. 2024).
- 2 Witten, C. *et al.* Deciphering Lyman- $\alpha$  emission deep into the epoch of reionization. *Nature Astronomy* **8**, 384–396. arXiv: 2303.16225 [astro-ph.GA] (Mar. 2024).
- 3 Burkhardt, B. *et al.* The Catalogue for Astrophysical Turbulence Simulations (CATS). *ApJ* **905**, 14. arXiv: 2010.11227 [astro-ph.GA] (Dec. 2020).

## Skills

- Languages  Strong reading, writing and speaking competencies for English, Mandarin Chinese.
- Coding  Python, C/C++, Fortran  $\LaTeX$ , ...
- Misc.  Teaching, typesetting and publishing.

## Schools, workshops and Conferences

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- 2023        **Saas-Fee Advanced Course, Les Diablerets, Switzerland**
- 2023        **RAMSES user meeting, Oxford, United Kingdom**  
Talk title: Ly $\alpha$  emission as a sensitive probe of feedback-regulated LyC escape from dwarf galaxies
- 2024        **Building galaxies from scratch, Vienna, Austria**  
Talk title: Ly $\alpha$  emission as a sensitive probe of feedback-regulated LyC escape from dwarf galaxies
- 2024        **Cosmic Lyman Alpha Workshop (CLAW), Kochel, Germany**  
Talk title: Ly $\alpha$  emission as a sensitive probe of EoR: the role of feedback, mergers and IGM damping

## Awards and Achievements

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- 2021        **University Medal** Australian National University.
- 2021-2025        **Cambridge Trust Issac Newton's studentship** University of Cambridge

## Teaching

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- 2022    **Stellar Dynamics and Structure of Galaxies** (3rd year undergrad course, supervision on problem sheets)

## Miscellaneous Experience

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### Outreach

- 2024    **Cambridge Festival: IoA open day** Volunteer to instruct kids to build constellation.