

Centre for Astronomy and Particle Theory, University of Nottingham
NG7 2RD
UK

✉ luke.conaboy@nottingham.ac.uk

🌐 lconaboy.github.io

🐙 [lconaboy](#)

🆔 0000-0002-6580-7177

Luke Conaboy

Employment

- 2023–present Research Fellow, University of Nottingham, Nottingham, UK
Advisor: Prof James Bolton
- 2022–2023 Research Associate, University of Nottingham, Nottingham, UK
Advisor: Dr Emma Chapman

Education

- 2018–2022 PhD Astronomy, University of Sussex, Brighton, UK
Supervisor: Prof Ilian Iliev
Thesis: Simulations of structure formation and feedback at high redshift
- 2014–2018 MSci Physics with Astronomy, University of Nottingham, Nottingham, UK
Degree classification: First

Publications

First author

- 2025 *The connection between high-redshift galaxies and Lyman α transmission in the Sherwood-Relics simulations of patchy reionisation*, **Conaboy**, Bolton, Keating, Haehnelt, Kulkarni, Puchwein, MNRAS 539(3)
- 2023 *Relative baryon-dark matter velocities in cosmological zoom simulations*, **Conaboy**, Iliev, Fialkov, Dixon, Sullivan, MNRAS 525(4)

Latter author

- 2025 *Square Kilometre Array Science Data Challenge 3a: Foreground removal for an EoR experiment*, SKA Data Challenge participants, **Conaboy**
MNRAS 543(2)
- Reionization in HESTIA: Studying reionization in the LG through zoom simulations*, Attard, **Conaboy**, Libeskind, Pillipenko, Dixon, Iliev
arXiv e-prints
- The Thermal Sunyaev-Zel'dovich Effect from the Epoch of Reionization*, Iliev, Hosein, Chluba, **Conaboy**, Attard, Mondal, Ahn, Gottlöber, Lewis, Ocvirk, Park, Shapiro, Sorce, and Yepes
MNRAS 540(2)

How probable is the Lyman- α damping wing in the spectrum of the redshift $z = 5.9896$ quasar ULAS J0148+0600?, Sawyer, Bolton, Becker, **Conaboy**, Haehnelt, Keating, Kulkarni, Puchwein, MNRAS 539(3)

2024 *Reproducibility of machine learning analyses of 21 cm reionization maps*, Sooknunan, Chapman, **Conaboy**, Mortlock, and Pritchard

arXiv e-prints

Dust-UV offsets in high-redshift galaxies in the Cosmic Dawn III simulation, Ocvirk, Lewis, **Conaboy**, Dubois, Bethermin, Sorce, Aubert, Shapiro, Dawoodbhoy, Lee, Teyssier, Yepes, Gottlöber, Iliev, Ahn, and Park

arXiv e-prints (in review)

The Lyman-limit photon mean free path at the end of late reionization in the Sherwood-Relics simulations, Feron, **Conaboy**, Bolton, Chapman, Haehnelt, Keating, Kulkarni, Puchwein, MNRAS 532(2)

2022 *The short ionizing photon mean free path at $z=6$ in Cosmic Dawn III, a new fully-coupled radiation-hydrodynamical simulation of the Epoch of Reionization*, Lewis, Ocvirk, Sorce, Aubert, **Conaboy**, Shapiro, Dawoodbhoy, Teyssier, Yepes, Gottlöber, Ahn, Iliev, Th  lie, MNRAS 516(3)

Conference proceedings

2022 *The Reionisation of the Local Universe in the Hestia Suite*, John von Neumann Institute for Computing Symposium, **Conaboy**, Iliev, Libeskind

Supervision

2022-present Assistant supervisor to a PhD student, University of Nottingham

Talks

Oct 2025 CCS Colloquium, CCS, Tsukuba

Oct 2025 KMM Discussion Meeting, NAOJ, Tokyo

Sep 2025 Kaba Kada EoR Meeting, Port Douglas

Apr 2025 Cake Talk, DAWN, Copenhagen

Feb 2024 Astronomy Colloquium, ICC, Durham

Nov 2023 TIFR State of the Universe, TIFR, Mumbai (online)

Nov 2023 Cambridge Galaxies Discussion Group, KICC, Cambridge

Jun 2023 CLUES Meeting 2023, LMU CAS, Munich

Jul 2022 *Hestia in the EoR*, CLUES Meeting 2022, Madrid

Sep 2021 *Baryon drift effects at high-redshift*, RAMSES User Meeting 2021, online

Dec 2020 *Baryon drift effects on small-scale structure*, PhD in a Pandemic 2020, online

Nov 2020 *Local Group zoom simulations and baryon drift*, CLUES Mid-term Meeting, online

Oct 2020 *Baryon drift effects on small-scale structure*, Third Global 21cm Meeting, online

Jan 2020 *Cosmological reionisation*, RAS Specialist Meeting, London, UK

Grants

- 2022 Co-PI (PI: Dr Noam I. Libeskind, PC: Prof Ilia T. Iliev) JUWELS (Jülich, Germany) computing time (13.3M core-h, applied) (**11M core-h, granted**)

Awards

- 2022 Physics Finalist, STEM for Britain

Conferences and workshops

Organising

- 2025 EAS 2025 SS22 – Modelling the first billion years, SOC, Cork, Ireland
Selecting talks
- 2022– University of Nottingham Astronomy Seminar Series, *Organiser*, Nottingham, UK
Inviting and hosting guest speakers
- 2020 SAZERAC 2020, LOC, online
Moderating discussion

Teaching

- Spring 2020 Foundation Mathematics B, *University of Sussex*
Assisting with workshops, marking.
- Autumn 2019 Scientific Computing, *University of Sussex*
Assisting with workshops, marking.
- Autumn 2019 Financial Computing with MATLAB, *University of Sussex*
Assisting with workshops, marking.

Computing skills

A list of languages or packages that I use regularly, or have experience using

- Languages Python (numpy, scipy, matplotlib, mpi4py, yt), Fortran, Bash, MPI, Matlab, C/C++
- Codes ramses, music, camb, gadget
- Other Linux, High performance computing, L^AT_EX