

Arthur Loureiro

RESEARCHER · ASTROPHYSICS & COSMOLOGY

The Oskar Klein Centre for Cosmoparticle Physics, Department of Physics, Stockholm University, Stockholm SE-106 91, Sweden
Visitor at Imperial Centre for Cosmology and Inference, Imperial College London, Physics Department, London, UK

✉ arthur.loureiro@fysik.su.se | 🏠 arthurloureiro.github.io | 📞 0000-0002-4371-0876 | 📺 arthurloureiro

Research & Work Experience

Stockholm University

Stockholm, Sweden

PI RESEARCHER

March. 2023 - PRESENT

Research Fellow on a Swedish National Space Agency Grant “Measuring the lightest neutrino mass with Euclid and the Planck”

Imperial College London

London, United Kingdom

POST-DOCTORAL RESEARCH ASSOCIATE (CURRENTLY VISITING RESEARCHER)

Dec. 2019 - PRESENT

PDRA (2019-2020) and visiting researcher (currently) working with Profs. Heavens & Jaffe on Field Level Inference for Cosmic Shear on the sphere.

University of Edinburgh

Edinburgh, United Kingdom

SENIOR SCIENTIST/DEVELOPER (50% FTE UNTIL OCT. 2022)

Sept. 2021 - Feb. 2023

Euclid SGS Senior Scientist/Developer working with Prof. Andy Taylor on weak lensing shape measurement calibration and sensitivity.

University College London

London, United Kingdom

RESEARCH FELLOW (50% FTE FROM SEPT. 2021)

Apr. 2020 - Sept. 2022

UCL Research Fellow working with Prof. Benjamin Joachimi on Bayesian methods for cosmological galaxy surveys such as the Euclid Satellite.

University College London

London, United Kingdom

POST-DOCTORAL RESEARCH ASSISTANT

Dec. 2018 - Dec. 2019

Euclid SGS PDRA working with Prof. Benjamin Joachimi on pipeline development, testing, and validation for Weak Lensing power spectra.

Education

University College London

London, United Kingdom

PHD IN ASTROPHYSICS

2015 - 2019

Advisors: Dr. F. Abdalla and Prof. Ofer Lahav

Thesis: The Universe in Harmonic Space: Neutrinos and Dark Energy

University of São Paulo

São Paulo, Brazil

MASTERS IN MATHEMATICAL PHYSICS

2013 - 2015

Advisor: Prof. L. Raul Abramo

Thesis: Galaxy Power Spectrum: A Monte-Carlo Approach

Université de Montréal

Montréal, Canada

UNDERGRADUATE EXCHANGE

2012

Exchange program as a bachelor student in Physics under the Science without Borders Scholarship.

Universidade Federal do Rio Grande do Sul

Porto Alegre, Brazil

UNDERGRADUATE DEGREE IN PHYSICS WITH EMPHASIS IN ASTROPHYSICS

2010 - 2013

Advisor: Prof. Silvio R. Dahmen

Dissertation: Relativistic Thermodynamics applied to Cosmological Models

Grants & Awards

SWEDISH NATIONAL SPACE AGENCY

2025-2028 (PI) Career Grant: “Measuring the Lightest Neutrino Mass with Euclid and Planck”, Stockholm University

€473 243

UKRI, EDINBURGH PARALLEL COMPUTING CENTRE

2024-2026 (Co-I) ARCHER2 eCSE: “GLASS: A GPU-enable ecosystem for simulating the universe”, UCL

£284 000

UNIVERSITY COLLEGE LONDON (UNITED KINGDOM)

2020-2022 UCL Provost Strategic Fund Fellowship, University College London

£112 554

NATIONAL COUNCIL FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT (BRAZIL)

2015-2018 **Science without Borders PhD Fellowship**, University College London

£131 378

2013-2015 **CNPq Masters Scholarship**, University of São Paulo

R\$30 000

2012 **Science without Borders Exchange Scholarship**, Université de Montréal

CAN\$6700

Skills & Professional Services

Programming	Advanced Python, Jupyter, Bash, and Slurm for HPC; intermediate C/C++, Julia, jax, torch, SQL.
Cosmological Codes	CLASS, Hi-CLASS, CAMB, Monte Python, CCL, Healpix, BORG, and Glass (co-developer)
Peer Reviewer	Journal of Cosmology and Astroparticle Physics, Monthly Notices of the Royal Astronomic Society, The Open Journal of Astrophysics
Scientific Collaborations	LSST Dark Energy Science Collaboration (1.0+ FTE), Euclid Consortium (3.5 FTE), Kilo Degree Survey
Leadership Roles	OKC Cosmology & Gravitation Working Group Coordinator (2024-) Pipeline Scientist for the Dark Energy Science Collaboration (2023-2025) Co-Lead Euclid LE3 Weak Lensing Pre-Launch Key Project (2021-2023) PDRA Representative at UCL's Astro Group (2020-2022),
Languages	English: Fluent (speaking, reading, writing); Portuguese: Native; French: Intermediate (speaking, reading) and basic (writing); Spanish: Basic (writing, speaking, reading); Swedish: < Basic (writing, speaking, reading);

Selected Publications

143 Publications, 74 of which are refereed, of those **7 as first author or *corresponding author**.

Total citations: 2942, **h-index: 23**. An up-to-date list of publications and citations can be found in [ADS here](#).

1. [Upper Bound of Neutrino Masses from Combined Cosmological Observations and Particle Physics Experiments](#)
A. Loureiro, A. Cuceu, et al., *Physical Review Letters*, 123, 2019 (80 citations)
2. [KiDS & Euclid: Cosmological implications of a pseudo- \$C_\ell\$ analysis of KiDS-1000 cosmic shear tomography](#)
A. Loureiro, L. Whittaker, A. Spurio Mancini, KiDS Collaboration & Euclid Collab., *A & A*, 665, 2022 (63 citation)
3. [Almanac: Weak Lensing power spectra and map inference on the masked sphere](#)
A. Loureiro, L. Whiteway, E. Sellentin, et al., *The Open J. of Astroph.*, 6, 6, 2023 (19 citations)
4. [Cosmological measurements from angular power spectra analysis of BOSS DR12 tomography](#)
A. Loureiro, B. Moraes, et al., *MNRAS*, 485, 2019 (52 citations)
5. [GLASS: Generator for Large Scale Structure](#)
N. Tessore, **A. Loureiro***, B. Joachimi et al., *The Open Journal of Astrop.*, 6, 11, 2023 (28 citations)
6. [Reconstructing the largest scales of the Universe with field-level inference applied to the Quia Quasar Catalogue](#)
A. Andrews, **A. Loureiro***, J. Jasche et al., *Submitted to MNRAS*, 2026

Research Supervision

2025-2026 Xander Nooderloos (MSc Erasmus) , Co-supervisor for Exchange Research Masters from U. of Utrecht on a project “Neutrino masses from cross-correlations between LSST and CMB Lensing”	<i>Stockholm University</i>
2024-2025 Iago Lopes-Dias (undergrad) , Co-supervisor for Undergraduate student at Federal University of Rio de Janeiro on an BSc thesis “Impact of Limber Approximation in angular power spectra of Spectroscopic Surveys”	<i>UFRJ</i>
2024-2025 Pedro Henrique Ribeiro (MSc) , Co-supervisor for Masters student at Federal University of Rio de Janeiro on a thesis “Forecasting the impact of linear 3x2pt systematics on constraints of neutrino mass for LSST”	<i>UFRJ</i>
2023 Ivan Sladoljev (MSc Erasmus) , Supervisor for Erasmus Exchange Research Trainee from U. of Zagreb on a project “Field Level Inference for PNGs in the CMB”	<i>Stockholm University</i>
2020 - 2021 Lisa Goh (MSc) , Co-supervisor together with Dr Lee Whittaker and Dr Benjamin Joachimi on a project “Pseudo- C_ℓ likelihood for the Euclid galaxy survey”	<i>UCL</i>
2018 Marion Thomas (undergrad) , Co-supervisor on a Summer Internship (12 weeks) project “Synergies between Spectroscopic and Photometric Galaxy Surveys” (Funded by RAS)	<i>UCL</i>
2018 Joshua Lawton (undergrad) , Co-supervisor on a Summer Internship (12 weeks) project “Creating a Galaxy Clustering Catalogue with PanSTARRS”	<i>UCL</i>

2017 - 2018 **Andrei Cuceu (undergrad)**, Co-supervisor with Dr Moraes on two Summer Internships (12 weeks each) projects “Simultaneous constraints of Cosmology and redshift distribution from galaxy surveys and CMB data” (Funded by RAS)

UCL

Teaching Experience

Stockholm University

Stockholm, Sweden

LECTURER - UNDERGRADUATE, MASTERS, AND PHD LEVEL

2023, 2025

Lecturer on “Statistical Methods for Physics” (2023, 2025) and “Nuclear and Particle Physics, Astrophysics and Cosmology” (2025)

University of Edinburgh

Edinburgh, UK

TEACHING ASSISTANT - PHD LEVEL

2022

Teaching assistant at the PhD Hackathon on data analysis (2022)

University College London

London, UK

TEACHING ASSISTANT - UNDERGRADUATE LEVEL

2016 - 2018

Practical Astronomy 2 (2017, 2018), Observational Astronomy 1 (2017), Practical Physics 2 (2017), Practical Skills for Astronomy (2016)

University of São Paulo

São Paulo, BR

TEACHING ASSISTANT - UNDERGRADUATE LEVEL

2014 - 2015

Physical Cosmology (2014/2), Advanced Quantum Mechanics (2014/1)

Universidade Federal do Rio Grande do Sul

Porto Alegre, BR

TEACHING ASSISTANT - UNDERGRADUATE LEVEL

2010 - 2013

Basic Astronomy (2011, 2013), Psychology of Education (2010)

Selected Outreach

Public Engagement talk at Scientifika Halloween Edition: “Who you gonna weigh? Ghost Particles!”

Sweden
2025

Public engagement talk about massive neutrinos and how to measure their masses combining cosmological data and particle physics.

Cover Article about the Euclid Telescope

Brazil
2023

Cover Article about the Euclid Telescope and the Early Released Images for the Brazilian Astronomy Magazine, organised by the Brazilian Astronomical Society. [Link](#)

Guest on the Podcast “Missão Exoplaneta”

Spotify
2023

Guest scientist in the Brazilian astronomy podcast Missão Exoplaneta (Exoplanet Mission) communicating about the Euclid Satellite Launch and my experience attending it at ESA Mission Control Centre. [Link](#)

Project Collaborator for #AstroThreadBR and #AstroMiniBR

Twitter
2019-2022

Social Media engagement with the science enthusiasts community in Brazil via the #AstroThreadBR and #AstroMiniBR projects to educate the general public about astronomy. Some threads reaching around 10-20k impressions.

Public Engagement Talk: “Weighing Ghost Particles with the Universe”

YouTube
2020

Public outreach talk for Astronomy on Tap London, live on YouTube due to COVID restrictions. URL: <https://youtu.be/MLwBvdc675A>

Press Release Article: “Ghost particles: how galaxies helped us weigh the lightest neutrino”

The Conversation
2019

Article published at The Conversation portal related to Loureiro et al. 2019 PRL, informing the general public about the main results in the paper.

Public Engagement Talk: “Hunting Ghosts with Galaxies”

Porto Alegre, BR
2018

Outreach talk at a high school about Cosmology, Neutrinos, and careers in academia and data science.

Art Exhibition: If a Tree falls in the Forrest, Cosmology meets Art

Grizdale Forest, UK
2018

Art exhibition in collaboration with the Royal College of Arts. Presentation of a workpiece “Confirmation of Time” in collaboration with the artist Franziska Hatton. URL: <http://ifatreefalls.rca.ac.uk>

Royal Academy of Arts Lates: L’Observatoire Bizarre

London, UK
2018

Public engagement in collaboration with the Royal College of Arts at the Dada & Surrealism RA Late. Organised by Dr. Andrew Pontzen and Michaela French.

Public Engagement Talk at Physics Club: “Time in Cosmology”

Porto Alegre, BR
2015

Outreach talk at the Physics Club about how time is perceived in Cosmology, Universidade Federal do Rio Grande do Sul.

Event Organisation

Kilo Degree Survey - 6x2pt Workshop

ORGANISER

Stockholm, Sweden

June/2025

Statistical Challenges on 21st Century Cosmology (Cosmo21)

SCIENTIFIC ORGANISING COMMITTEE

Chania, Greece

May/2024

Euclid Collab. Meeting, Session on Field Level Inference

CO-ORGANISER

Copenhagen, DN

May/2023

Euclid Weak Lensing Science Working Group Meeting

CO-ORGANISER

Edinburgh, UK

Dec/2022

London Cosmology Discussion Meeting - "Breaking LCDM"

ORGANISER

(online) London, UK

Feb/2021

Cosmology and Extragalactic Seminars at UCL

ORGANISER

London, UK

Jan/2019 - Jan/2021

Euclid CalWG, Garage Day & OU-LE3 Meeting

ORGANISER

London, UK

2017

Euclid Consortium Meeting

ORGANISATIONAL GROUP

London, UK

2017

CosmoClub

ORGANISER

São Paulo, BR

2014

Selected Talks

2024	CMB/LSS Discussion Group Seminar , Institute of Astronomy, University of Cambridge	Cambridge, UK
2023	Dark Sector Cosmology Talk , Jet Propulsion Lab, NASA/Caltech	Passadena, US
2023	Cosmology Talk , The Oskar Klein Centre, Stockholm University	Stockholm, SE
2022	Talk at GR effects in observing the Large-Scale Structure of the Universe , Universidade do Porto	Porto, PT
2022	Cosmology Seminar , Queen Mary University of London	London, UK
2022	Cosmology Seminar , University of Portsmouth	Portsmouth, UK
2021	Cosmology Group Talk , University of São Paulo	São Paulo, BR
2021	Stobie Talk on Science Funding Crisis in Brazil , University of Edinburgh	Edinburgh, UK
2021	Cosmology Seminar at the PPGCosmo , Federal University of Espírito Santo	Vitória, BR
2021	Cosmology Seminar , CosmoStat, Commissariat à l'énergie atomique (CEA)	Saclay, FR
2021	Cosmology Seminar , Max Planck Institute for Astrophysics	Munich, GE
2020	Talk at the Kilo Degree Survey Busy Week , German Centre for Cosmological Lensing	Bochum, GE
2019	Seminar at the Royal Observatory's Coffee Talks , University of Edinburgh	Edinburgh, UK
2019	Seminar at the EEP Group Meeting , University of Sussex	Brighton, UK
2019	Talk at the Euclid Consortium Meeting , University of Helsinki	Helsinki, FN
2018	Astrophysics Seminar , Universidade Federal do Rio Grande do Sul	Porto Alegre, BR
2018	Department of Mathematical Physics Seminar , University of São Paulo	São Paulo, BR
2018	Astrophysics Seminar , National Institute for Space Research	SJ dos Campos, BR
2017	Talk at the Dark Energy Survey Collaboration Meeting , University of Chicago	Chicago, US
2017	Talk at the Euclid OU-LE3 Meeting , Royal Astronomical Society	London, UK
2016	Talk at the Dark Energy Collaboration Meeting , Cambridge University	Cambridge, UK
2015	Talk at the J-PAS Warm-up Meeting , University of São Paulo	São Paulo, BR

References

Prof. Alan Heavens

CHAIR IN ASTROSTATISTICS

Contact: a.heavens@imperial.ac.uk

Imperial College London

Prof. Benjamin Joachimi

PROFESSOR IN ASTRONOMY

Contact: b.joachimi@ucl.ac.uk

University College London

Prof. Elisa Chisari

ASSOCIATE PROFESSOR OF PHYSICS

Contact: n.e.chisari@uu.nl

Utrecht University