



# Arthur Loureiro

POST-DOCTORAL RESEARCH ASSISTANT · ASTROPHYSICS & COSMOLOGY

Imperial College London, Physics Department, London, UK

✉ arthur.loureiro.14@ucl.ac.uk | 🗂 arthurmloureiro.github.io | 📡 arthurmloureiro | 🐦 @cosmonist

## Research Experience

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### Imperial College London

Post-Doctoral Research Associate

London, United Kingdom

Dec. 2019 - PRESENT

PDRA working with Prof. Alan Heavens and Prof. Andrew Jaffe on Bayesian Hierarchical Models for Cosmic Shear on the sphere.

### University College London

Post-Doctoral Research Assistant

London, United Kingdom

Jan. 2019 - Dec. 2019

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

## Education

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### University College London

PhD in Astrophysics

London, United Kingdom

2015 - 2019

Advisors: Dr. Filipe Abdalla and Prof. Ofer Lahav

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

### University of São Paulo

Masters in Mathematical Physics

São Paulo, Brazil

2013 - 2015

Advisor: Prof. L. Raul Abramo

Thesis: Galaxy Power Spectrum: A Monte-Carlo Approach

### Université de Montréal

Undergraduate Exchange

Montréal, Canada

2012

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

### Universidade Federal do Rio Grande do Sul

Undergraduate Degree in Physics with Emphasis in Astrophysics

Porto Alegre, Brazil

2010 - 2013

Advisor: Prof. Silvio R. Dahmen Dissertation: Relativistic Thermodynamics applied to Cosmological Models

## Skills & Professional Services

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**Programming** Advanced Python, Jupiter Notebook, and Shell/TCShell; intermediate C/C++, Fortran, Mathematica, SQL and HPC.

**Cosmological Codes** CLASS, Hi-CLASS, CAMB, CosmoMC, Flask, and Healpix.

**Peer Reviewer** Journal of Cosmology and Astroparticle Physics

## Languages

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**English** Fluent (speaking, reading, writing)

**Portuguese** Native speaker

**French** Intermediate (speaking, reading) and basic (writing)

**Spanish** Basic (writing, speaking, reading)

## Publications

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- 1 Upper Bound of Neutrino Masses from Combined Cosmological Observations and Particle Physics Experiments  
**A. Loureiro**, A. Cuceu, et al., *Physical Review Letters*, 123 (8), 2019
- 2 Cosmological measurements from angular power spectra analysis of BOSS DR12 tomography  
**A. Loureiro**, B. Moraes, et al., *Mon. Notices of the Royal Astronomical Soc.*, 485 (1), 2019
- 3 Fourier analysis of multitracer cosmological surveys  
L. R. Abramo, L. F. Secco & **A. Loureiro**, *Mon. Notices of the Royal Astronomical Soc.*, 455 (4), 2016

# Grants & Awards

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## NATIONAL COUNCIL FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT (BRAZIL)

2015-2018 **Science without Borders PhD Fellowship**, University College London  
2012    **Science without Borders Exchange Scholarship**, Université de Montréal

£131,378  
CAN\$6700

# Teaching Experience

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## University College London

DEMONSTRATOR - UNDERGRADUATE LEVEL

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

London, UK

2016 - 2018

## University of São Paulo

DEMONSTRATOR - UNDERGRADUATE LEVEL

- Physical Cosmology (2015)
- Advanced Quantum Mechanics (2014)

Sao Paulo, BR

2014 - 2015

## Universidade Federal do Rio Grande do Sul

DEMONSTRATOR - UNDERGRADUATE LEVEL

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

Porto Alegre, BR

2010 - 2013

# Outreach

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## Talk: “Hunting Ghosts with Galaxies”

PUBLIC ENGAGEMENT TALK

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

Porto Alegre, BR

2018

## If a Tree falls in the Forrest: Cosmology meets Art

ART EXHIBITION

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>

Grizedale Forest, UK

2018

## L’Observatoire Bizarre

ROYAL ACADEMY OF ARTS LATES

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

London, UK

2018

## Physics Club: “Time in Cosmology”

PUBLIC ENGAGEMENT TALK

Outreach talk at the Physics Club, Universidade Federal do Rio Grande do Sul.

Porto Alegre, BR

2015

# Event Organisation

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## Cosmology and Extragalactic Seminars

ORGANISER

UCL’s Cosmology and Extragalactic weekly seminars

London, UK

2019-Currently

## Euclid CalWG, Garage Day & OU-LE3 Meeting

ORGANISER

Four day meeting at the Royal Astronomical Society and University College London.

London, UK

2017

## Euclid Consortium Meeting

PART OF THE ORGANISATIONAL GROUP

Meeting at University College London

London, UK

2017

## **Euclid Level 3 Simulations Meeting**

London, UK

ORGANISER

One day meeting at University College London

2017

## **CosmoClub**

Sao Paulo, BR

ORGANISER

Journal club and weekly seminars at the Department of Mathematical Physics, University of Sao Paulo

2014

## **Physics Academic Week**

Porto Alegre, BR

CO-ORGANISER

2011 Physics Academic Week at UFRGS

2011

## **Invited Talks**

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2019	<b>Seminar at the EEP Group Meeting</b> , University of Sussex	Brighton, UK
2019	<b>Talk at the Spectroscopic Surveys Meeting</b> , University College London	London, UK
2019	<b>Talk at the Euclid Consortium Meeting</b> , University of Helsinki	Helsinki, FN
2018	<b>Talk at the Dark Energy Survey Collaboration Meeting</b> , University of Campinas	Campinas, BR
2018	<b>Astrophysics Seminar</b> , Universidade Federal do Rio Grande do Sul	Porto Alegre, BR
2018	<b>Department of Mathematical Physics Seminar</b> , University of Sao Paulo	Sao Paulo, BR
2018	<b>Astrophysics Seminar</b> , National Institute for Space Research	SJ dos Campos, BR
2018	<b>Seminar for UCL's Lunch Talks</b> , University College London	London, UK
2018	<b>Talk at TESTDE Final Workshop</b> , Royal Astronomical Society	London, UK
2017	<b>Talk at the Dark Energy Survey Collaboration Meeting</b> , University of Chicago	Chicago, US
2018	<b>Talk at the Euclid Consortium Meeting</b> , University College London	London, UK
2017	<b>Talk at the Euclid UK Collaboration Meeting</b> , University of Portsmouth	Portsmouth, UK
2017	<b>Talk at the Euclid OU-LE3 Meeting</b> , Royal Astronomical Society	London, UK
2016	<b>Talk at the Dark Energy Collaboration Meeting</b> , Cambridge University	Cambridge, UK
2015	<b>Talk at the J-PAS Warm-up Meeting</b> , University of Sao Paulo	Sao Paulo, BR

## **References**

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### **Prof. Ofer Lahav**

University College London

PROFESSOR AT THE DEPARTMENT OF PHYSICS AND ASTRONOMY

Contact: o.lahav@ucl.ac.uk

### **Dr. Benjamin Joachimi**

University College London

READER IN ASTRONOMY

Contact: b.joachimi@ucl.ac.uk

### **Prof. L. Raul Abramo**

University of Sao Paulo

PROFESSOR AT THE MATHEMATICAL PHYSICS DEPARTMENT

Contact: abramo@if.usp.br