



# Arthur Loureiro

POST-DOCTORAL RESEARCH ASSISTANT · ASTROPHYSICS & COSMOLOGY

Imperial College London, Physics Department, London, UK

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## Research Experience

### 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

### 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 Sao Paulo

MASTERS IN MATHEMATICAL PHYSICS

Sao 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

### 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

### English

Fluent (speaking, reading, writing)

### Portuguese

Native speaker

### French

Intermediate (speaking, reading) and basic (writing)

### Spanish

Basic (writing, speaking, reading)

## Publications

- 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

£131,378

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

CAN\$6700

## Teaching Experience

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### University College London

London, UK

DEMONSTRATOR - UNDERGRADUATE LEVEL

2016 - 2018

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

### University of Sao Paulo

Sao Paulo, BR

DEMONSTRATOR - UNDERGRADUATE LEVEL

2014 - 2015

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

### Universidade Federal do Rio Grande do Sul

Porto Alegre, BR

DEMONSTRATOR - UNDERGRADUATE LEVEL

2010 - 2013

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

## Outreach

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### Talk: "Hunting Ghosts with Galaxies"

Porto Alegre, BR

PUBLIC ENGAGEMENT TALK

2018

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

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

Grizdale Forest, UK

ART EXHIBITION

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>

### L'Observatoire Bizarre

London, UK

ROYAL ACADEMY OF ARTS LATES

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.

### Physics Club: "Time in Cosmology"

Porto Alegre, BR

PUBLIC ENGAGEMENT TALK

2015

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

## Event Organisation

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### Cosmology and Extragalactic Seminars

London, UK

ORGANISER

2019-Currently

UCL's Cosmology and Extragalactic weekly seminars

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

London, UK

ORGANISER

2017

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

### Euclid Consortium Meeting

London, UK

PART OF THE ORGANISATIONAL GROUP

2017

Meeting at University College London

## Euclid Level 3 Simulations Meeting

ORGANISER

One day meeting at University College London

London, UK

2017

## CosmoClub

ORGANISER

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

Sao Paulo, BR

2014

## Physics Academic Week

CO-ORGANISER

2011 Physics Academic Week at UFRGS

Porto Alegre, BR

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	S J 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

PROFESSOR AT THE DEPARTMENT OF PHYSICS AND ASTRONOMY

Contact: o.lahav@ucl.ac.uk

University College London

### Dr. Benjamin Joachimi

READER IN ASTRONOMY

Contact: b.joachimi@ucl.ac.uk

University College London

### Prof. L. Raul Abramo

PROFESSOR AT THE MATHEMATICAL PHYSICS DEPARTMENT

Contact: abramo@if.usp.br

University of Sao Paulo