

Antón Baleato Lizancos ab2368@cam.ac.uk • IoA, Madingley Road, CB3 0HA Cambridge, UK
DOB: 16/04/1993 – Citizenship: Spanish

Research Interests

Theoretical and data-driven cosmology. Weak gravitational lensing of the cosmic microwave background and the large scale structure of the Universe.

Education

University of Cambridge, Institute of Astronomy, Cambridge, UK **Oct, 2017 -**

- PhD candidate in Cosmology supervised by Prof. Anthony Challinor.
- Isaac Newton Scholar

University of Cambridge, DAMTP, Cambridge, UK **Oct, 2016 - Jun, 2017**

- MAST in Applied Mathematics & Theoretical Physics (*Part III of the Mathematical Tripos*)
- Trinity College Scholar in Mathematics

Columbia University, New York, USA **Sep, 2012 - May, 2016**

- B.Sc. Applied Physics, minor in Applied Mathematics
- Egleston Scholar
- *Magna Cum Laude*

Lester B. Pearson UWC of the Pacific, BC, Canada **Sep, 2010 - June, 2012**

- International Baccalaureate & UWC Diplomas.

Awards

- *Rouse Ball research bursary, Trinity College Cambridge (June 2019, December 2019)*
- *Isaac Newton Studentship at the University of Cambridge*
- *Marie Skłodowska-Curie/ Inphinit La Caixa graduate fellowship* (declined)
- *Instituto de Astrofísica de Canarias Summer Studentship*
- *Trinity College Cambridge Studentship in Mathematics*
- *Perimeter Institute PSI scholarship* (declined)
- *Columbia University Egleston Scholar*
- *Davis UWC Scholar at Columbia University*
- *United World Colleges Scholarship*

Research Experience

Alan Turing Institute, London, UK **Dec, 2019**

- Data Study Group in collaboration with the World Wildlife Fund
- In a team, built a pipeline to detect threats to a network of 200,000+ protected sites by applying Natural Language Processing and Machine Learning techniques to news articles. ([Report](#))

Simons Observatory **Jan, 2018 -**

- Member of the delensing working group
- Development of a pipeline for B-mode delensing using internal reconstructions of the lensing potential as well as external tracers.

Institute of Astronomy and Kavli Institute for Cosmology, University of Cambridge **Oct, 2017 -**

- Supervisor: Prof. Anthony Challinor
- Lensing (and delensing) of the Cosmic Microwave Background with a focus on detection of gravitational waves from cosmic inflation.

Instituto de Astrofísica de Canarias, Tenerife, Spain **July, 2017 - Sep, 2017**

- Supervisor: Dr. Claudio Dalla Vecchia

-
- Studied the origin and evolution of massive compact relic galaxies by means of the EAGLE suite of cosmological simulations.

Columbia University Experimental Cosmology group, NY, USA

Oct, 2013 - May, 2016

- Supervisor: Prof Amber Miller
- Developed feature-recognition and cross-correlation algorithms to study velocity field dynamics, vorticity and turbulence in Mesospheric Polar Clouds. ([Abstract](#))

Oxford University Astrophysics, Radio Astronomy group, Oxford, UK

June, 2014 - Aug, 2014

- Supervisors: Dr Gemma Anderson and Dr Jess Broderick
- Searched for Supernova remnants using LOFAR data, aiming to understand and test selection effects in their identification.

Selected publications

- A. Baleato Lizancos, A. Challinor and J. Carron *Impact of internal-delensing biases on searches for primordial B-modes of CMB polarisation, submitted to JCAP*, [[arXiv:2007.01622](#)]

Membership

- Fellow of the Royal Astronomical Society
- Member of Trinity College, University of Cambridge
- Member of the Simons Observatory collaboration

Teaching

- Supervised *Introduction to Cosmology*. Final year undergraduate course taught by Prof. Max Pettini. 10/2018-1/2019, University of Cambridge.
- Supervised *The Physics of Cosmology*. Final year undergraduate course taught by Prof. George Efstathiou. 1/2020-4/2020, University of Cambridge.

Public engagement

- “Campus de estrelas” Developed an online resource ([Galician/English](#)) for cosmology outreach for the *Aulas Galegas* teaching platform.
- “Gravitational lensing: a window to the invisible Universe” 2/2020 Public outreach talks. Institute of Astronomy, Cambridge, UK.
- “Our Utterly Wonderful Cosmos” 11/2019 Friday Night Lecture. Atlantic College UWC. Wales, UK.
- “Telescopes as time machines” 5/2019 Public outreach talks. Institute of Astronomy, Cambridge, UK.
- Institute of Astronomy Outreach program staff. 11/2017- Institute of Astronomy, University of Cambridge
- “Un Universo en evolución” 11/2016. Área de Galego. Instituto Español Cañada Blanch. London, UK
- Volunteer STEM teacher for immigrant teenagers 7-9/2016, Ecodesarrollo Gaia NGO, A Coruña, Spain

Additional information

Computing skills:

- High-performance computing (experience on NERSC and Cambridge clusters)
- Natural Language Processing – topic modelling, sentiment analysis
- Neural networks – implementations of deep learning, active learning

Programming languages:

- Bash (advanced), Python (advanced), Mathematica (advanced), Tensorflow & PyTorch (elementary)

Languages:

- Full Professional competence: Galician, Spanish, English (TOEFL 119/120)
- Intermediate: French, Portuguese
- Elementary: German

References

Prof. Anthony Challinor, DAMTP and Institute of Astronomy, University of Cambridge

Dr. Blake Sherwin, DAMTP, University of Cambridge

Dr. Claudio Dalla Vecchia, Instituto de Astrofísica de Canarias

Prof. Amber Miller, Department of Physics, Columbia University