

THIBAUT LOUIS

Laboratoire de Physique des 2 Infinis Irène Joliot Curie, 15 Rue Georges Clemenceau 91400 Orsay ◊ louis@lal.in2p3.fr

RESEARCH

2017–present CNRS permanent researcher, Laboratoire de Physique des 2 Infinis Irène Joliot Curie
2015–2017 Post-doctoral Research Fellow, Institut Astrophysique de Paris with Prof Joseph Silk
2014–2015 Post-doctoral Research Fellow, Oxford University with Prof Joanna Dunkley

EDUCATION

2011–2014 University of Oxford, Department of Astrophysics and Christ Church College; PhD in Astrophysics; Advisor: Joanna Dunkley
2010 Master in Theoretical Physics, Ecole Normale Supérieure de Lyon

MAJOR COLLABORATIONS

2018–present Lead of the power spectrum and likelihood group of Simons Observatory
2016–present Member of the Simons Observatory collaboration
2011–present Member of the ACT collaboration (ACT/ACTPol/AdvACT)

SUPERVISION OF STUDENTS AND POSTDOCS

Post-doc Lukas Hergt (2024-), Hiroaki Imada (2018–2020)
Thesis Merry Duparc (2024-), Adrien La Posta (2020–2023), I acted as co-supervisor for Sylvain Vanneste (2016–2019)
Undergrad Adam Soussana (2018), Magdy Morshed (2018)

PUBLIC CODES

All the codes I have written are in the public domain, some of them can be accessed on my [github](#), others on the Simons Observatory [github](#). Here is a non exhaustive list of codes for which I have important contributions

1. I am the main developer of [pspy](#), a public code allowing to estimate power spectra (and pure power spectra) of angular maps with Healpix and CAR pixellisation as well as their associated analytical covariance matrices. The code also implements the Toeplitz approximation that we have proposed in [this paper](#).
2. I am the main developer of [PSpipe](#), a pipeline generator allowing to reproduce the most recent ACTPol and Planck results.
3. I am one of the main developer of [mflike](#), which implements the multifrequency likelihood of the forthcoming Simons Observatory experiment.

PUBLICATIONS

At the time of writing this CV, I have authored 92 publications, a list can be accessed on [arXiv](#). Some highlighted ones follow

1. I have led the power spectrum analysis of the first and second year of ACTPol data, resulting in [this paper](#) with over 100 citations, the data release corresponding to this paper can be accessed on [LAMBDA](#).
2. I have led the data comparison between from the ACT experiment and the Planck experiment resulting in [this paper](#) demonstrating the agreement between the ground and space experiments.
3. I have studied in details what physical information can be obtained from clusters of galaxies using the next generation of ground based CMB experiments, resulting in the publication of few papers on: [Cluster lensing](#), [kSZ effect](#), [pSZ effect](#)

TEACHING, OUTREACH AND INSTITUTIONAL RESPONSIBILITIES

2024–present	National Coordinator of the master project "Simons Observatory" at IN2P3
2022–present	Member of the scientific council DIM Universe
2022–present	Lectures on "Cosmology of the dark Universe" Université Paris Saclay.
2021–present	Lectures on "Statistical methods for cosmology" Euclid summer school.
2021–present	Coordinator of the transverse groups "Flavor" and "Cosmology" at IJCLab.
2013–present	I am a regular referee for Physical Review D and Physical Review Letters .
2013–present	Participation to numerous outreach events: stargazing at Oxford, "Fete de la science" at IAP and LAL
2018–2020	Organisation of Seminars, Laboratoire de l'Accélérateur Linéaire
2015–2017	Founder and co-organiser of Cosmology Coffee, Institut Astrophysique de Paris
2015–2017	Postdoc representative for the Laboratory Council, Institut Astrophysique de Paris
2013–2014	Tutorials for the 3rd year course : General Relativity and Cosmology, Oxford University

TALK AND SEMINARS

Below is a list of recent talks and seminars

- 2025 New measurement of CMB polarisation from the Atacama Cosmology Telescope (IJCLab and IAP)
- 2025 ACT DR6, I was a speaker at the data release webinar (> 500 attendees).
- 2025 ACT DR6: Cosmology on the steep rise, invited talk (Sexten)
- 2024 Talk on Simons Observatory at the University of Chicago
- 2023 Final ACT, talk at the Colloque national Action Dark Energy
- 2021 Power spectrum from the latest AdvACT data, talk at Princeton University (remote)
- 2019–2020 The Simons Observatory Power Spectrum Pipeline, talk at Berkeley University and Princeton University
- 2019 Hunting for new physics with the Simons Observatory, seminar given at IAP and LPNHE (the seminar has been recorded: [youtube](#))
- 2018 Physics with the next generation Ground Based CMB experiments, talk at IAP, MITP Workshop, PNCG
- 2016–2017 ACTPol results and prospects for CMB S4, seminar given at LAL, IAP, APC, LPNHE and Cambridge
- 2016 Reconstructing cosmic growth with kSZ observations, talk at IAP and l'APC
- 2016 Gravitational lensing and cross-correlation, talk at l'Instituto de Física Teórica Madrid
- 2015 Measuring the effect of clusters on the CMB sky, talk at IAP
- 2015 ACTPol power spectra, talk at Princeton University, Oxford University

REFERENCES

1. Prof Joanna Dunkley, jdunkley@princeton.edu
2. Prof Lyman Page, page@princeton.edu
3. Prof Joseph Silk, silk@iap.fr
4. Prof David Spergel, dns@astro.princeton.edu