

# THIBAUT LOUIS

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

## RESEARCH

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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

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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

## SUPERVISION OF STUDENTS AND POSTDOCS

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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), Marie Arbogast (2025)

## TEACHING

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2025	Lectures on "Statistical methods for cosmology" IDPASC Summer School.
2022–present	Lectures on "Cosmology of the dark Universe" Université Paris Saclay.
2021–present	Lectures on "Statistical methods for cosmology" Euclid summer school.
2013–2014	Tutorials for the 3rd year course : General Relativity and Cosmology, Oxford University

## PUBLICATIONS

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At the time of writing this CV, I have authored 99 publications, a list can be accessed on [arXiv](#). Some highlighted ones follow

1. I have led the power spectrum analysis of the final ACT data release, resulting in [this paper](#) with over 100 citations, the data release corresponding to this paper can be accessed on [LAMBDA](#).
2. 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](#)

## INSTITUTIONAL RESPONSIBILITIES

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2024–present	National Coordinator of the master project "Simons Observatory"
2022–present	Member of the scientific council DIM Universe
2021–2025	Coordinator of the transverse groups "Flavor" and "Cosmology" at IJCLab.
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–present	I am referee for Physical Review D and Physical Review Letters .

## MAJOR COLLABORATIONS

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- 2018–present Lead of the power spectrum and likelihood group of Simons Observatory  
2020–present Lead of the power spectrum and likelihood group of the Atacama Cosmology Telescope collaboration

## PUBLIC CODES

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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 an non exhaustive list of codes for which I have important contributions

1. I am the main developper 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 developper of [PSpipe](#), a public pipeline allowing to reproduce the ACT DR6 and Planck results.
3. I am one of the main developper of [mflike](#), which implements the multifrequency likelihood of the forthcoming Simons Observatory experiment.

## TALK AND SEMINARS

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Below is a list of recent talks and seminars

- October 2025 Talk at "CMB France"  
September 2025 Invited talk at "CMB day at CERN"  
August 2025 Invited talk at Rodolphe Cledassou summer school  
June 2025 Invited talk at Subatech, Nantes  
June 2025 Invited talk at the "Cosmology from Home" conference  
June 2025 Invited talk at the "Cosmological Frontiers in Fundamental Physics" conference  
April 2025 Scientific case of COSMOCAL, CNES, Toulouse  
April 2025 Invited talk at the "GDR Cophy" conference  
March 2025 Talk at IJClab, Orsay  
March 2025 Invited talk IAP, Paris  
March 2025 I was a speaker at the [ACT DR6 data release webinar](#) (> 500 attendees).  
Feb 2025 Invited talk at the "Cosmology on the steep rise" conference  
July 2024 Talk on Simons Observatory at the University of Chicago

## REFERENCES

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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

## OUTREACH

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I actively engage in science communication and public outreach, translating complex cosmological results for a broad audience through press releases, media interviews, and educational events.

### Press & Media Coverage

- Interviewed about ACT results in [Sciences et Avenir](#).
- Interviewed about the strongly lensed SN Refsdal [Sciences et Avenir](#).
- Featured on the national radio station [France Culture](#) to discuss cosmological findings from ACT.

### Public Communication: Press Releases

- 2025 - Authored the press release on the most precise map of CMB polarization anisotropies.
- 2024 - Authored the press release on the first light of Simons Observatory.
- 2024 - Authored the press release on the distribution of dark matter in the Universe.
- 2020 - Authored the press release on ACT's measurement of the age of the Universe.

### Educational & Community Outreach

- 2025–present - “*Voyage tout au bout de l’Univers*”: educational presentations on astrophysics in elementary schools.
- 2013–present - Participation in numerous public science events, including stargazing at Oxford and “Fête de la science” at the Institut d’Astrophysique de Paris (IAP).