

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

2011–present Member of the ACT collaboration (ACT/ACTPol/AdvACT)
2016–present Member of the Simons Observatory collaboration
2018–present Lead of the power spectrum and likelihood group of Simons Observatory
2020–present External member of the Litebird collaboration
2021–present Member of DESC

SUPERVISION OF STUDENTS AND POSTDOCS

Post-doc Hiroaki Imada (2018–2020)
Thesis 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 69 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

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

TALK AND SEMINARS

Below is a list of recent talks and seminars

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| 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