Raphaël Wicker

Last occupied position

10/2020 - 09/2023

PhD Student Université Paris-Saclay, CNRS, Institut d'Astrophysique Spatiale, 91405, Orsay, France, Grant from the ED AAIF (Ecole Doctorale Astronomie et Astrophysique d'Ile de France)

Education

10/2020 – 09/2023	 Ph.D., Universite Paris-Saclay Astronomy and Astrophysics Thesis title: Baryon in galaxy clusters: astrophysical effects and cosmological con- straints Defended on October 2nd 2023.
2018 – 2020	Master's Degree, Universite Paris-Saclay Astronomy and Astrophysics Thesis title: Analysis of galaxy superclusters detected with SZ effect and observed with VLT/VIMOS
2017 - 2020	Magistère, Universite Paris-Saclay Fundamental Physics
2015 – 2018	Bachelor, Universite Paris-Sud Fundamental Physics

Teaching

2020 - 2023	Fundamental Concepts of the Universe Optional teaching in 1st year of Bachelor. To- tal of 25h of tutorials + lectures
	Thermodynamics 1st year of Bachelor. Total of 72h of tutorials
	Astronomy Experimental teaching 1st year of Master. Total of 34h of experimental teaching
2020 - 2022	Astronomy Experimental projects 3rd year of Bachelor. Total of 20h of experimental teaching
	Electromagnetic Waves 2nd year of Bachelor. Total of 42h of tutorials

List of Publications

Journal Articles

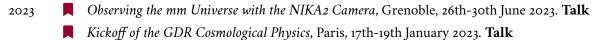
Wicker, R., Aghanim, N., Bonjean, V., Lecoq, E., Douspis, M., Burgarella, D., & Pointecouteau, E. (2023). A VLT/VIMOS view of two Planck multiple-cluster systems: Structure and galaxy properties. *Astronomy & Astrophysics, 676*, A61. *O* doi:10.1051/0004-6361/202346608. arXiv: 2304.03058 [astro-ph.CO]

2 Wicker, R., Douspis, M., Salvati, L., & Aghanim, N. (2023). Constraining the mass and redshift evolution of the hydrostatic mass bias using the gas mass fraction in galaxy clusters. *Astronomy & Astrophysics*, *674*, A48. Ø doi:10.1051/0004-6361/202243922. arXiv: 2204.12823 [astro-ph.CO]

Conference Proceedings

Wicker, Raphaël, Douspis, M., Salvati, L., & Aghanim, N. (2022). Constraining hydrostatic mass bias and cosmological parameters with the gas mass fraction in galaxy clusters. In *Mm universe @ nika2 - observing the mm universe with the nika2 camera* (Vol. 257, p. 00046).

Contributed talks and posters



- Conférence Elbereth des Doctorants en Astronomie et Astrophysique d'Ile de France, Meudon, 23rd-25th March 2022. **Talk**
 - Galaxy Clusters 2022: Challenging Our Cosmological Perspectives, Remote, 25th-29th April 2022. Poster
 - 4th World Summit on Exploring the Dark Side of the Universe, Saint-Gilles-les-Bains, o6th-12th November. Talk
- 2021 Conférence Elbereth des Doctorants en Astronomie et Astrophysique d'Ile de France, Remote, 8th-12th February 2021. Talk
 - Observing the mm Universe with the NIKA2 Camera, Remote, 28th June-2nd July 2021. Talk
 - st KIAA Forum on Gas in Galaxies for Early Career Scientists, Remote, 1st-5th November 2021. **Poster**

Invited talks and seminars

- 2023 Séminaire API Galaxies et Grandes Structures, Remote, March 30th 2023. Seminar, invited by LUTH
 - PhD Seminar, Laboratoire Astroparticules et Cosmologie (APC), Paris, April 20th 2023. Seminar

Skills

2022

Languages	French (mother tongue), English (C1), Spanish (A2), Swedish (A2)
Coding	Python, LTEX, C, C++, sql, Notions of Fortran90
Computational skills	Statistical data analysis including bayesian inference, optical data reduction (spectroscopy, photometry), machine learning (notions).

Grants and awards

- 2022 Young researchers call for abstracts accepted in the Exploring the Dark Side of the Universe (EDSU2022) Conference
- 2020 Grant from the Ecole Doctorale Astronomie et Astrophysique d'Ile de France (ED127) for the completion of the PhD
- 2019 Erasmus+ scholarship for a 13 weeks internship in Gothenburg, Sweden

Public outreach

2022 - · · · ·	Streaming sessions on Twitch, discussion on general astrophysics and cosmology
2022	EDSU2022 Conference : 3 meetings with high school and middle school students for an introduction to cosmology
	Fête de la Science in IAS, Orsay and LUTH, Meudon
	Festival "Du Big Bang aux Big Bands" 15 min interview on the gas fraction of galaxy clusters
2021	Introduction to cosmology for middle school students

Public outreach (continued)

2020	" An introduction to cosmology " Conference for the student astronomy association AL-COR
2019	" PKSong 1830-211: Comment j'ai fait chanter un quasar " Conference describing a musical project using molecular absorber data, for the astronomy association ALCOR
2018–2020	Strong implication in the astronomy association ALCOR as vice-president and president. Partook in organizing and giving talks, as well as animating amateur astronomical observations

Miscellaneous Experience

Certification

2019 **TOEIC**. Awarded by Universite Paris-Saclay. 965/990