

# Clara Vergès

Staff Scientist @ Lawrence Berkeley National Lab

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[Clara Vergès](#) • [ClaraVerges](#)

## Education & Academic appointments

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### Positions

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**Lawrence Berkeley National Laboratory** since 2024  
*Staff scientist (tenure-track) in the Physics Division*

**Center for Astrophysics | Harvard & Smithsonian** 2020 – 2024  
*Harvard Postdoctoral Fellow in the CMB group*

### Education

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**Université Paris Cité** 2017 – 2020  
*PhD in Cosmology*

Dissertation: *Searching for cosmological B-modes in the presence of astrophysical contaminants and instrumental effects*, with Radek Stompor and Josquin Errard at AstroParticle and Cosmology laboratory

**ISAE-Supaéro & Université Paul Sabatier** 2016 – 2017  
*M.S. – Double degree in Astrophysics and Aerospace Engineering*

Master thesis: *Novel readout electronics for CMB experiments*, with Matt Dobbs at McGill University

**École polytechnique** 2013 – 2016  
*B.S. in Physics & M.S. in Astrophysics (Cycle Ingénieur polytechnicien)*

Senior thesis: *Looking for SZ effect in ALMA data*, with Paola Andreani at European Southern Observatory

## Professional service

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### Collaboration membership

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**CMB-S4** since 2021  
*Low- $\ell$  BB working group coordinator, Science Council, Junior Scientist Advancement Committee*

**BICEP/Keck** since 2020  
*Senior member, Calibration & Systematics lead*

### Community service

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**Proposal panel review member** since 2025  
*National Science Foundation (NSF), National Aeronautics and Space Administration (NASA)*

**Reviewer** since 2024  
*Journal of Cosmology and Astroparticle Physics (JCAP), The Astrophysical Journal (ApJ)*

**Parity Violation from Home** since 2023  
*Remote conference – SOC*

## Fellowships & Awards

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**Early-Career Laboratory Directed Research & Development Award** 2025-2028  
*3-year research grant for early career scientists at LBNL*

**France Berkeley Fund** 2025-2027  
*Travel grant for bilateral collaboration between France and Berkeley*

**KICP fellow (declined)** 2024  
*University of Chicago*

## Mentoring, Teaching & Outreach

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### Mentoring

- Postdoc: Nicolò Raffuzi (LBNL, since 2025)
- PhD students: Annie Polish (Harvard, since 2022), Brodi Elwood (Harvard, since 2022), Christos Giannakopoulos (University of Cincinnati, since 2021), Miranda Eiben (Harvard, 2024-2025), James Cornelison (Harvard, 2020-2023)
- Undergraduates & Interns: Taro Ramaciotti (UC Berkeley, since 2025), Dylan Chang (UC Berkeley, since 2025), Veronica Hoffman (LBNL intern, 2025), Kane Sjöberg (Harvard, 2023), Will Golay (Harvard REU intern, 2022)

### Teaching

- Qualification for holding entry-level professor positions in France, issued by the French Ministry of Higher Education and Research, based on teaching record and teaching statement (*Qualification aux fonctions de Maître de Conférence, Sections CNU 29 & 34*) – Issued 2021
- Education volunteer for high-school students & young adults from underprivileged background, 2015 – 2024
- Physics for pre-med students, Computer Science 101 – Université Paris Cité, 2019

### Outreach

- Astronomy on Tap San Francisco speaker, Fall 2025
- UC Berkeley Astro Night speaker, Spring 2025
- CMB-S4 Outreach Program, 2022 - 2025
- Regular participation in physics and astronomy outreach with Berkeley Lab K-12 Education & Outreach Program (since 2025), *Fête le Savoir* (since 2017, board member 2018-2020) and *Universciel* (2018-2020).

## Selected publications

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- [1] The BICEP/Keck Collaboration. “BICEP/Keck XVIII: Measurement of BICEP3 polarization angles and consequences for constraining cosmic birefringence and inflation”. In: *Phys. Rev. D* 111.6, 063505 (Mar. 2025), p. 063505. doi: [10.1103/PhysRevD.111.063505](https://doi.org/10.1103/PhysRevD.111.063505).
- [2] C. Giannakopoulos, C. Vergès, and the BICEP/Keck collaboration. “Calibration measurements of the BICEP3 and BICEP array CMB polarimeters from 2017 to 2024”. In: *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XII*. Vol. PC13102. SPIE, 2024, PC1310219. doi: [10.1117/12.3020443](https://doi.org/10.1117/12.3020443).
- [3] J. Cornelison, C. Vergès, and the BICEP/Keck collaboration. “Improved polarization calibration of the BICEP3 CMB polarimeter at the South Pole”. In: *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI*. Vol. 12190. SPIE, 2022, p. 121901X. doi: [10.1117/12.2620212](https://doi.org/10.1117/12.2620212).
- [4] The BICEP/Keck Collaboration. “BICEP/Keck XIII: Improved Constraints on Primordial Gravitational Waves using Planck, WMAP, and BICEP/Keck Observations through the 2018 Observing Season”. In: *Phys. Rev. Letters* 127.15, 151301 (Oct. 2021), p. 151301. doi: [10.1103/PhysRevLett.127.151301](https://doi.org/10.1103/PhysRevLett.127.151301).
- [5] C. Vergès, J. Errard, and R. Stompor. “Framework for analysis of next generation, polarized CMB data sets in the presence of Galactic foregrounds and systematic effects”. In: *Phys. Rev. D* 103 (6 Mar. 2021), p. 063507. doi: [10.1103/PhysRevD.103.063507](https://doi.org/10.1103/PhysRevD.103.063507).

Complete list: [arXiv](#) - [ADS](#) - [Google Scholar](#)

## Talks & Seminars

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### Seminars.....

- *Constraining cosmic birefringence with BICEP3* – RG Division Flash Talks, Center for Astrophysics, October 2024
- *A new era for cosmology with current and next-generation CMB experiments* – LBNL Physics Division Research Progress Meeting, Lawrence Berkeley National Laboratory, February 2024
- *Cosmology with BICEP/Keck: From inflation to cosmic birefringence* – KICP seminar, February 2024
- *Cosmology with BICEP/Keck: From inflation to cosmic birefringence* – AstroParticle and Cosmology Laboratory (APC), December 2023
- *A window on the Universe with the next generation of millimeter-wave telescopes* – UCR Physics Seminar, University of California Riverside, March 2023
- *A new era for cosmology with current and next-generation CMB experiments* – Submillimeter Array (SMA) Science Seminar, March 2023
- *A window on the Universe with the next generation of millimeter-wave telescopes* – LBNL Physics Division Research Progress Meeting, Lawrence Berkeley National Laboratory, February 2023
- *Updated Constraints on Primordial Gravitational Waves using Planck, WMAP, and BICEP/Keck Observations through the 2018 Observing Season* – CfA Seminar, April 2022
- *Probing Universe's first light: Looking for inflation with the new generation of CMB polarisation experiments* – ESO Lunch Talk, June 2020

### Invited talks.....

- *Beam Systematics in BICEP/Keck* – Beam Mode workshop, Stockholm University, September 2023
- *New Constraints on Primordial Gravitational Waves using Planck, WMAP, and BICEP/Keck Observations through the 2018 Observing Season* – CMB France Workshop, November 2021
- *Impact of instrumental systematic effects on component separation and large scale B-modes measurements* – CMB Calibration and systematics focus workshop, Kavli IPMU, December 2020

### Contributed talks.....

- *Status and future plans for the South Pole Observatory*, CMB France workshop, October 2025
- *Constraining cosmic birefringence with CMB polarisation experiments*, mm-Universe 2025, KICP, June 2025
- *Constraining isotropic polarisation rotation with BICEP3*, CMB-S4 Collaboration Meeting, July 2023
- *Beam calibration campaign requirements to control temperature-to-polarisation leakage for CMB-S4* – From Planck to the future of the CMB, INFN Ferrara, May 2022
- *A framework for performance forecasting of the parametric component separation in the presence of systematic effects* – B-modes from Space workshop, MPA, December 2019
- *Instrumental systematic effects for the new generation of CMB polarisation experiments* – Young French Physicists annual meeting, organised by the French Physics Society (SFP), November 2018

### Posters.....

- *A high-precision absolute polarization calibration technique for CMB polarimeters* (Annie Polish) – mm-Universe 2025, June 2025
- *Improved RPS calibration for the BICEP3 telescope* (Kane Sjöberg) – AAS Winter Meeting, January 2024
- *New Algorithms for Characterizing the Beams of Next-Generation CMB Experiments* (Will Golay) – AAS Winter Meeting, January 2023
- *Control of beam systematics and temperature-to-polarisation leakage: From BICEP/Keck demonstrated performance to forecasts for CMB-S4* – Rencontres de Moriond, January 2022
- *Latest results, current data-analysis and upcoming upgrades of the POLARBEAR experiment* – CosmoGold IAP 2019 : The golden age of cosmology from Planck to Euclid, June 2019

## References

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**John M. Kovac**

*Professor of Astronomy and of Physics, Harvard University*  
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**Radek Stompor**

*Senior Researcher, AstroParticle & Cosmology laboratory, CNRS (France)*  
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**Kirit S. Karkare**

*Assistant Professor, Boston University*  
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Additional references available upon request