

# MARTA MONELLI

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## RESEARCH INTERESTS

- Physics of the cosmic microwave background (CMB);
- Development of simulations for the next generation of CMB experiments;
- Study of systematic effects for CMB polarization measurements.

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## ACADEMIC APPOINTMENTS

### Project researcher

Kavli Institute for the Physics and Mathematics of the Universe, Kashiwanoha, Japan

OCT 2024 - today

### Postdoctoral research fellow

Max Planck Institute for Astrophysics, Garching, Germany

MAY 2024 - OCT 2024

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## OTHER RESEARCH EXPERIENCE

### Internship student

Max Planck Institute for Astrophysics, Garching, Germany

JAN 2020 - JUN 2020

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## EDUCATION

### Ph.D. in Physics

degree obtained from LMU Munich at Max Planck Institute for Astrophysics, Garching, Germany

JUN 2020 - APR 2024

Thesis: “Development of realistic simulations for the polarization of the cosmic microwave background”

Supervisor: Prof. Dr. Eiichiro Komatsu

### Master's Degree in Physics

University of Pisa, Pisa, Italy

NOV 2015 - DEC 2018

### Bachelor's Degree in Physics

University of Pisa, Pisa, Italy

OCT 2012 - DEC 2015

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## PUBLICATIONS

(total: 19 papers, of which 2 first author)

### First author papers

1. M. Monelli, E. Komatsu, T. Ghigna, T. Matsumura, G. Pisano and R. Takaku: “*Impact of half-wave plate systematics on the measurement of CMB B-mode polarization*”. Published in JCAP, Volume 05 (2024).
2. M. Monelli, E. Komatsu, A. E. Adler, M. Billi, P. Campeti, N. Dachlythra, A. J. Duivenvoorden, J. E. Gudmundsson and M. Reinecke: “*Impact of half-wave plate systematics on the measurement of cosmic birefringence from CMB polarization*”. Published in JCAP, Volume 03 (2023).

### First author tier papers (significant contributor)

3. M. Bortolami, N. Raffuzzi, L. Pagano, G. Puglisi, A. Anand, A. Banday, P. Campeti, G. Galloni, A. Lonappan, M. Monelli et al (LiteBIRD collaboration): “*First release of LiteBIRD simulations from an end-to-end pipeline*”. Published in JCAP 11 (2025) 042.
4. R. Aurlien, M. Galloway, E. Gjerløw, U. Fuskeland, A. Basyrav, M. Bortolami, M. Brilenkov, P. Campeti, H. K. Eriksen, D. Herman, M. Monelli et al (Cosmoglobe and LiteBIRD collaborations): “*On the computational feasibility of Bayesian end-to-end analysis of LiteBIRD simulations within Cosmoglobe*”. Published in JCAP 11 (2025) 041.
5. M. Tomasi, L. Pagano, A. Anand, C. Baccigalupi, A. Banday, M. Bortolami, G. Galloni, M. Galloway, T. Ghigna, S. Giardiello, M. Gomes, E. Hivon, N. Krachmalnicoff, S. Micheli, M. Monelli et al (LiteBIRD collaboration): , “*A Simulation Pipeline for the LiteBIRD Instruments*”. Published in JCAP 11 (2025) 040.

### Collaboration papers

- Contributing author to 14 additional LiteBIRD collaboration papers (2021–present).

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## PROFESSIONAL PRESENTATIONS

## Conference talks

- Quy Nhon, Vietnam, *21st Rencontres du Vietnam*, **invited talk** (*LiteBIRD overview talk*), Aug 2025.
- Kyoto, Japan, *COSMO'24 Conference*, contributed talk, Oct 2024.
- Madrid, Spain, *COSMO'23 Conference*, contributed talk, Sep 2023.

## Workshop and seminar talks

- Kavli IPMU, Japan, *LiteBIRD global F2F*, talk(s), Jan 2026.
- SISSA, Italy, *APC Seminar*, **invited talk**, Jan 2026.
- Hamburg Observatory, Germany, *Colloquium*, **invited talk**, Dec 2025.
- Max-Planck-Institute for Astrophysics, Germany, *Cosmology Seminar*, **invited talk**, Dec 2025.
- Università di Ferrara, Italy, *Special seminar*, **invited talk**, May 2025.
- IFCA, Spain, *Cosmology group meeting*, **invited talk**, May 2025.
- KEK, Japan, *CMB B-mode NEXT*, **invited talk**, Jan 2025.
- Kavli IPMU, Japan, *LiteBIRD global F2F*, talk, Jan 2025.
- Milan, Italy, *CMB-Cal workshop*, contributed talk (online), Nov 2024.
- Kashiwa-no-ha, Japan, *Kashiwa-no-ha Dark Matter and Cosmology symposium*, contributed talk, Nov 2024.
- Max-Planck-Institute for Astrophysics, Germany, *Institute Seminar*, **invited talk**, Sep 2024.
- McGill University, Canada, *Trottier Space Institute special seminar*, talk, Oct 2023.
- Rome, Italy, *CMB-Inflate meeting*, talk (online), Sep 2023.
- Stockholm, Sweden, *Beam Mode workshop*, **invited talk** (online), Sep 2023.
- KEK, Japan, *CMB Group Seminar*, **invited talk**, Jun 2023.
- Max-Planck-Institute for Astrophysics, Germany, *Cosmology Seminar*, **invited talk**, May 2023.
- Chino, Japan, *Workshop on Very Light Dark Matter*, **invited talk** (online), Mar 2023.
- University of New Brunswick, Canada, *Gravity Group meeting*, talk, Feb 2023.
- Perimeter Institute, Canada, *Special seminar*, talk, Feb 2023.
- Canadian Institute for Theoretical Astrophysics, Canada, *Cosmolunch*, talk, Feb 2023.
- KEK, Japan, *Cosmophysics Seminar*, **invited talk** (online), Dec 2022.
- Tenerife, Spain, *Galactic science and CMB foregrounds Workshop*, contributed talk, Dec 2022.
- Kavli IPMU, Japan, *CMB group meeting*, talk, Sep 2022.
- KEK, Japan, *CMB group meeting*, talk, Sep 2022.
- Kavli IPMU, Japan, *9th core-to-core program CMB Japan group seminar for young scientists*, talk, Sep 2022.
- Online, *CMB-Inflate kickoff meeting*, talk, Dec 2021.
- Online, *LiteBIRD global S2S*, talk, Oct 2021.

## Poster presentations

- Kavli IPMU, Japan, *WPI committee site visit*, poster, January 2026.
- Vancouver, Canada, *LiteBIRD global F2F*, poster, July 2024.
- Kavli IPMU, Japan, *LiteBIRD Japan F2F*, poster, Jun 2023.
- Okayama, Japan, *LiteBIRD global F2F*, online poster, Dec 2022.
- Online, *LiteBIRD global S2S*, poster, Oct 2021.

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## PROFESSIONAL ACTIVITIES

### Leadership and organization

- Early-career LiteBIRD staff representative (2026-present)
- Co-organizer of *CMB group meetings*, Kavli IPMU (2024–present)
- Local Organizing Committee chair and Scientific Organizing Committee member, *LiteBIRD Winter F2F* (2025)
- Co-organizer of “*Informology*”, weekly early-career meeting, MPA (2023–2024)

## **Teaching and mentorship**

- Co-supervisor of Taisei Iwagaki, Master student, IPMU CMB group (2025–2026)
- Substitute teacher (Physics and Mathematics), secondary school level, Italy (2019–2020)

## **Collaboration and service**

- Member, LiteBIRD collaboration (2021-present)
  - Sience Ground Segment (2025-present)
  - MaPLEs (2024-present)
  - Recipe + Sensitivity Task Force (2024-2025)
  - Simulation Team (2021-present)
- Member, CMB-Inflate program, MPA (2021–2024)

## **Outreach and public engagement**

- Outreach talk for high school students visiting from RSJ, Kavli IPMU (Nov 2025)
- Intercultural Exchange Seminar, Kyoritsu Women's Junior College (Oct 2025)