

CV Michele Bianco

May 14, 2025

Institute for Particle Physics and Astrophysics, ETH Zurich,
Wolfgang-Pauli-Str 27, 8093 Zurich, Switzerland
E-mail: mbianc@ethz.ch, Website: <https://micbia.github.io/>

Personal Data

Date of birth: July 10th, 1990, Sorengo, Ticino, Switzerland

Citizenship: Swiss, Italian

Languages: Italian (Native), English (fluent), French (fluent), German (good), Spanish (beginner)

Education

- **PostDoc in Astrophysics:** [2024 - to date]
Institute for Particle Physics and Astrophysics, ETH Zurich, Switzerland
Supervisor: [Prof. Alexandre Refregier](#)
- **PostDoc in Astrophysics:** [2021 - 2024]
Laboratoire d'Astrophysique, EPFL, Lausanne, Switzerland
Supervisor: [Prof. Jean-Paul Kneib](#)
- **PhD in Astrophysics:** [2017 - 2021]
Astronomy Centre, University of Sussex, Brighton, United Kingdom
Thesis title: "*Modelling Cosmological Reionisation and its Observational Signatures*"
Supervisor: [Prof. Ilian T. Iliev](#)
External referee: [Prof. Adrian Liu](#) (McGill University)
- **MSc in Astrophysics:** [2015 - 2017]
Ludwig-Maximilians-University LMU, Munich, Germany
Thesis title: "*The Effect of Large Scale Structure Correlation on the Halos Cluster Counts*"
Supervisor: [Prof. Jochen Weller](#)
- **BSc in Physics & Mathematics:** [2011 - 2014]
University of Fribourg UNIFR, Fribourg, Switzerland

Employments & Academic Experiences

- **Max-Planck Institute for Astrophysics, Munich:**
LTA program, fieldwork experience [Mar. 2020 - Sep. 2020]
Project: "*The Effect of Cosmological Parameters on Reionization Observables*", with the associated researcher Dr. Benedetta Ciardi.
- **University of Stockholm:**
LTA program, fieldwork experience [Set. 2019 - Feb. 2020]
Project: "*Deep Learning methods applied to the Epoch of Reionization*", in collaboration with the reionization group of Prof. Garrelt Mellema
- **University of Sussex:**
Assistant tutor, *Introduction to Astrophysics* [Winter Semester 2018]
Led problem-solving workshop and marked the undergraduate year
Assistant tutor, *Mathematical Methods for Physics* [Winter Semester 2018]
Led problem-solving workshop and marked the undergraduate year

-
- **Swiss Army:**
Fulfilment of the Swiss military service [2014-2015]
Fusilier Battalion 30/3, Recruit Company 11-3/1
 - **University of Fribourg:**
Assistant tutor, *Physics I & II* exercises [2013-2014]
Led problem-solving workshop for bio-physics undergraduate year
Assistant tutor, *Practical Laboratory* for first year [2013-2014]
Led practical experiment workshop for bio-physicist undergraduate year

Scholarship, Grants & Awards

Listed in reverse chronological order. Grants on High-Performance Computers show the principal investigator (PI) and the Co-Investigator (CoI).

- Platform for Advanced Scientific Computing (PASC) development fund (930'000 CHF) 2025-2028
- SKACH computing allocation fund at CSCS (500k GPU-h = 12'500 CHF) 2022-2023
- Swiss Society for Astrophysics and Astronomy (SSAA) travel grant (1'000 CHF) March 2023
- Young Scientist Award (YSA) at XXXVth URSI, General Assembly and Scientific Symposium 2023
- Piz Daint (CSCS, Switzerland) PI: SKACH computing time grant 07/22 - 07/23
Tier-0, project "*21-cm image recover for SKA with Deep Learning*" (420k core-h and 4.5k GPU-h)
- Dardel (KTH, Sweden) CoPI: (PI: I. Iliev), PRACE computing time grant 09/21 - 09/22
Tier-1 (DECI-17 program), project "*Radiative feedback on halos and IGM at high-redshift*" (10.1M core-h, standardised hours)
- JUWELS (Jülich, Germany) CoI (PI: S. Gottlöber): computing time grant 10/20 - 10/21
Tier-0, project "*Near Field Cosmology*" (3.5M core-h + 0.1M GPU-h = Euro 175,000)
- DECI0380 CoI: (PI: I. Iliev) Partnership for Advanced Computing in Europe (PRACE) 07/19 - 11/20
Tier-1 (DECI-15 program), project "*SubgridEoR*" (20.16M core-h, standardised hours)
- SNIC 2019/1-19 CoI: (PI: G. Mellema) SNAC computing time grant 07/19 - 01/20
Tier-1 SNIC Large Compute, project "*The end of cosmic reionization*" (2.5M core-h)
- JUWELS (Jülich, Germany) CoI: (PI: I. Iliev): computing time grant 07/18 - 10/19
Tier-0 project (3.5M core-h = 175,000€)
- Long Term Attachment LTA grants program (1 years, 12,000£ per annum) 01/19 - 07/20
- STFC travel grants (3.5 years, 1,250£ per annum) 09/17 - 03/21
- STFC astronomy PhD research grants (4 years, 15,000£ per annum) 09/17 - 09/21

Supervised Student

List of students and their relative projects supervised by me.

- *Hrvoje Križić* (ETHZ) – Master Thesis, 2025
Title: Normalizing Flow-Based Modeling for Detecting Ionizing Sources within HII Regions
- *Vito Rajković* (ETHZ) – Master Thesis, 2024
Title: Improving radio interferometry mock observation for SKA-Low and MWA
- *Patrick Hirling* (EPFL) – Master Thesis, 2024
Title: Impact of self-shielding on the HI content of low-mass dark matter halos in the ionizing UV background, [GitHub](#)
- *Patrick Hirling* (EPFL) – Specialization Project, 2023
Title: Write your own Radiative Transfer code for Cosmic Epoch of Reionisation simulations, [GitHub](#), [arXiv](#)
- *Federico Di Gennaro, Gabriele d'Angeli & Riccardo Brioschi* (EPFL) – ML4Science Project, Dec. 2022
Title: Modelling of the neutral hydrogen in galaxies with a Fully-Connected Neural Network, [GitHub](#)
- *Damien Korber* (EPFL) – Master Thesis, 2022
Title: PINION: Physics-informed neural network for accelerating radiative transfer simulations for cosmic reionization, [GitHub](#), [arXiv](#), [MNRAS](#)
- *Giulia Mescolini, Matteo Calafa & Paolo Motta* (EPFL) – ML4Science Project, Dec. 2021
Title: Machine Learning replaces Radiative Transfer, [GitHub](#)

References

- **Prof. Alexandre Refregier** (PostDoc advisor), Institute for Particle Physics and Astrophysics, ETH Zurich (ETHZ), Wolfgang-Pauli-Str 27, 8093 Zurich, Switzerland;
email: alexandre.refregier@phys.ethz.ch, telephone: +41 44 633 27 70
- **Prof. Jean-Paul Kneib** (PostDoc advisor), Laboratoire d'Astrophysique, Ecole Polytechnique Federale de Lausanne (EPFL), Observatoire de Sauverny, Versoix 1290, Switzerland;
email: jean-paul.kneib@epfl.ch, telephone: +41 22 379 24 73
- **Prof. Ilian T. Iliev** (PhD supervisor), University of Sussex, Sussex House, Falmer Brighton, BN1 9RH United Kingdom; email: I.T.Iliev@sussex.ac.uk, telephone: +44 1273 873737
- **Prof. Garrealt Mellema** (LTA PhD supervisor), Stockholm University, SE-106 91 Stockholm, Sweden;
email: garrealt.mellema@astro.su.se, telephone: +46 08-553 785 52