

EuCAPT: current status & future directions

EuCAPT Symposium 2024
14 May 2024

**Silvia Pascoli and
David Marsh**

EuCAPT change of governance



Since 01 February 2024, the EuCAPT governance has changed.

EuCAPT Director:
Prof. Silvia Pascoli (U. Bologna/INFN)



EuCAPT Vicedirector:
Prof. David Marsh (Stockholm U.)

EuCAPT Council Chair (since Oct 2023):
Dr. Francesca Calore (LAPTh CNRS)



Many thanks to the founding Director Gianfranco Bertone for all his work in establishing EuCAPT and his successful leadership!

Developing EuCAPT

Prioritised new goals:

- to reach out to other communities to foster collaborations and dedicated common efforts;
- to provide a common forum for prompt scientific exchanges (e.g. rapid response topical workshops);
- to constitute a focus point for the community where issues concerning scientific policy and working conditions can be discussed and acted upon.
- to explore and attract additional EuCAPT funding to support existing and new activities.

Renewal of Central HuB

The MoU with CERN to host EuCAPT ends in July 2024.

CERN has kindly confirmed its intention of continuing to host EuCAPT. We are in the process of carrying out the bureaucratic aspects.



We thank CERN for the important administrative and financial (together with APPEC) support provided so far, and for the organisation and hosting of the EuCAPT Symposium.

Activities and Task Forces

EuCAPT comprises over 140 institutions and 1700 scientists!
We plan to continue the very successful activities carried out so far with renewed enthusiasm, via the dedicated TF:

Website

Colloquia

Training

Workshops

Newsletter

Outreach

Funding
opportunities

Governance

Community
building

EuCAPT Symposium: May 14-16 2024, CERN



Collaborative projects TF

Chair: Alvise Raccanelli. Members: Jose A. R. Cembranos, Riccardo Catena, Zeljka Bosnjak.

Mission: coordinate research projects and initiatives with a broad scope across the EuCAPT Community, e.g.

- updating the EuCAPT White Paper;
- developing and maintaining repositories for code, tools and lectures;
- identifying new opportunities for collaborative projects across the community.

Review/update of the White Paper. Please give comments/suggestions in the poster session.



EuCAPT Colloquium TF

Chair: Anne Green (outgoing). Members: Carmelo Evoli, Sébastien Renaux-Petel, Alessandra Silvestri

Mission: Organise regular online colloquia, aimed at the entire EuCAPT community (all science areas and career stages).

- Colloquia Take place on zoom, at 15.00 CE(S)T on the 2nd Tuesday of the month, from Oct-Jun. Attendance ~100 people. Advertised via the EuCAPT mailing list and newsletter, and iNSPIRE. Slides and videos available at: <https://indico.cern.ch/category/12056/>

Mostly 'science' topics + EDI + 'skills' (c.f. Nov 2022 talk by Matteo Rini, editor of APS Physics magazine, on 'Finding words for Physics').

- **Comments/suggestions (in particular for 'skills' speakers).**



EDI and community building TF

Chair: Jessica Turner

Mission:

- Review and determine successful applicants of EUCAPT International Exchange Applications with an emphasis on building new collaborations for junior researchers.
- Understand and analyse demographic data of EUCAPT to gain insights into community composition and needs.
- Recommend speakers for colloquia and events focused on Equity, Diversity, and Inclusion (EDI) within EUCAPT.
- Act as ombudspersons for EUCAPT community.



Funding opportunities TF

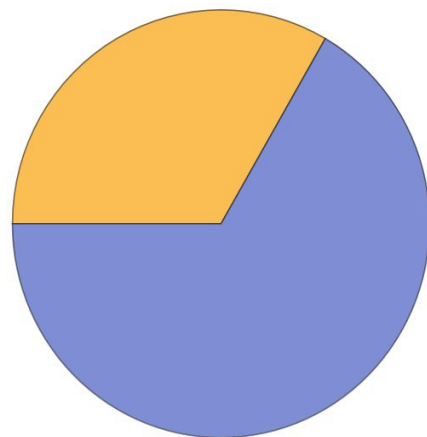
Chair: Gabriela Barenboim. Members: Joachim Kopp, Foteini Oikonomou, Gabrijela Zaharijas, Ivonne Zavala.

First EuCAPT School

Cosmology + Soft Skills

18-22 September, 2023

100 students



<https://eucaptcosmo.blogs.uv.es/>

Online course:

Key Elements in Proposal Writing for Horizon Europe

Thursday 25 Apr 2024, 09:00 → 13:00

140 participants

<https://indico.ific.uv.es/event/7525/>



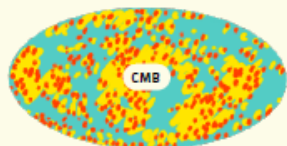
COSMOLOGY

Unravelling the history of our Universe

We have reconstructed our cosmic history by observing the most distant and ancient objects in the sky.



Our Universe was born 13.7 billion years ago, in a colossal explosion called the Big Bang, and it has been expanding ever since. The oldest known remnants from this event are traces of the first primordial elements that were forged when the Universe was hot and only a second old. The cosmic background radiation, or "CMB", offers the first clear picture of our Universe when it was just 380 thousand years old.



Beyond traditional telescopes, the emergence of multi-messenger astronomy offers us fresh insights into the Universe. For instance, gravitational waves, discovered in 2015, capture the space-time ripples produced by cataclysmic events such as the collision of black holes.

ASTROPARTICLES

The Cosmic particle laboratory

At the smallest scales, matter is composed of particles.



They interact via fundamental forces, such as the strong nuclear force, which binds quarks and gluons within protons, and the electromagnetic force, which binds electrons to protons within atoms.

The Universe hosts astrophysical environments and accelerates particles at very high energies. Capturing these "astroparticles" with our telescopes allows us to gain new insights on their properties. Understanding the fundamental laws that govern the particles is also crucial to describe the Universe shortly after the Big Bang, when it consisted of a hot soup of particles and radiation.

ASTROPARTICLE THEORY

From the smallest to the largest scales

"Nothing exists per se except atoms and the void." Lucretius - 1st century BC

Today, we know that our atoms make up merely a small fraction of the matter in the Universe. The rest is dark matter. We have also come to understand that vacuum is far from empty. It is imbued with a tiny dark energy that, at cosmological scales, is accelerating the expansion of the Universe.



Discovering the nature of dark matter and dark energy stands as one of the paramount scientific challenges of the 21st century. Other mysteries of this modern cosmological conundrum are the physics that governed the Big Bang and the origin of matter itself.

We are trying to get private funding. And for that, we developed a brochure to introduce ourselves.

Send us your feedback !

About EuCAPT

The European Consortium for Astroparticle Theory (EuCAPT) was founded in 2020 with the task of meeting the modern challenges of Cosmology and Astroparticle physics. This is a large, diverse and highly talented community striving to unravel our cosmological history and make discoveries that shape our future.

Our mission

- EXCHANGE** ideas and knowledge
- COORDINATE** scientific activities
- ATTRACT** resources for research
- PROMOTE** a stimulating environment

EuCAPT in Europe



EuCAPT currently counts more than 2,000 scientists from over 120 research centers in Europe. Its central node is located at CERN, Switzerland.

To learn more

- eu capt secretariat@cern.ch
- eu capt.org
- Director: Silvia Pascoli
- Vice Director: David Marsh
- @EuCAPT

Acknowledgments Bus as accusci 1lestia ndaest, ut harum dolo quidernature cum allas molorro cuptat poresti untiae officiundi omnis et minvelestem nullictistem votut ex et aut omnis autem et

EuCAPT
EUROPEAN CONSORTIUM
FOR ASTROPARTICLE THEORY



Where the Universe meets its constituents



Governance TF

Chair: Francesca Calore. Members: Ricardo Z. Ferreira, David Langlois, Arttu K. Rajantie.

Mission:

- Guarantee bottom-up structure of EuCAPT;
 - Guarantee representation to all members of the community, respecting diversity and inclusivity;
 - Lay out the rules that govern EuCAPT and its entities, i.e. steering committee, council, etc., and the relationships with APPEC and the central hub (CERN);
 - Design electoral procedures for the different roles at EuCAPT.
- EuCAPT governance document: <https://drive.google.com/file/d/12s8BUDnWdCSTHSbkLp-sHOtCvaM-UhSN/view?usp=sharing>



Past actions:

Prepare elections for new EuCAPT director and write job announcement [Done, Oct 2023]

Prepare next Council Chair election [Done, Oct 2023]

Future goals:

Maintain official EuCAPT governance document updated

Revise membership and representation rules [To be done, Oct 2024]

Identify issues/criticalities of current rules

Propose ways to solve these issues to the Council and Steering Committee

Please reach out for suggestions/comments



Newsletter TF

Chair: Andrew Taylor. Members: Giuseppe Fanizza, and John Antoniadis.

Mission: to produce and distribute the EuCAPT Newsletter. This is a crucial communication channel for EuCAPT and contains news, information on job opportunities, notices about upcoming conferences and workshops, and links to the EuCAPT member 'community profiles'.

You can sign up for the EuCAPT Newsletter on the website.



Outreach TF

New Chair: Jorge Martin Camalich

Mission: to coordinate, facilitate and foster outreach in areas of astroparticle physics.

Premio Cosmos: France starts this year (Pierre Vanhove) and progress in Spain for next year, maybe.

EuCAPT's brochure: Collaboration with Gabriela Barenboim and Ève Barlier (professional scientific illustrator).

Considering to generate a series of professional illustrations as resources for outreach purposes.

Looking for early career researchers with interest in producing content or help. Considering challenges and feasibility of generating modest EuCAPT's web content (youtube) via voluntary basis of task force members.



Symposium TF

Chair: Valerie Domcke

Mission: to provide input and guidance regarding all aspects of the organization of the annual symposium. In particular, to critically evaluate goals to be achieved by the symposium, collect feedback from participants and provide suggestions for the format of future symposiums. Details of the symposia can be found on the Events page.

EuCAPT Symposium 2024: CERN 14-16 May 2024

Over 200 participants! Exciting scientific programme. Excellent opportunity to gain feedback from the astroparticle theory community.

Chair: Ema Dimastrogiovanni. Members: Harry Desmond, Marina Migliaccio, Christoph Wenger

Propose/organise training activities such as:

- Master/PhD schools
- Day workshops about topics such as grant writing, public speaking and other soft skills
- ...

Collect and advertise (through the EuCAPT website) information on training activities/programmes such as:

- Master and PhD programmes
- Exchange programmes
- Summer and winter schools
- ...



FIRST EUCAPT SCHOOL: COSMOLOGY

University of Valencia
18-22 September 2023

$\frac{2}{3}$ science + $\frac{1}{3}$ soft skills

A combined effort of many EuCAPT members...

SOC:

Gabriela Barenboim
Gianfranco Bertone
Philippe Brax
Ema Dimastrogiovanni
Matteo Fasiello
Davide Gerosa
Marina Migliaccio
Foteini Oikonomou
Silvia Pascoli
Gabrijela Zaharijas
Paolo Panci

... and great speakers:

Carlo Contaldi
Daniel Figueroa,
Andrew Jaffe
Mark Hindmarsh
Alessandra Silvestri
Gianmassimo Tasinato
Andrew Tolley
David Wands



Website TF

New Chair: Katy Clough. Member: Bradley Kavanagh. Junior contributor: Nikolina Šarčević.

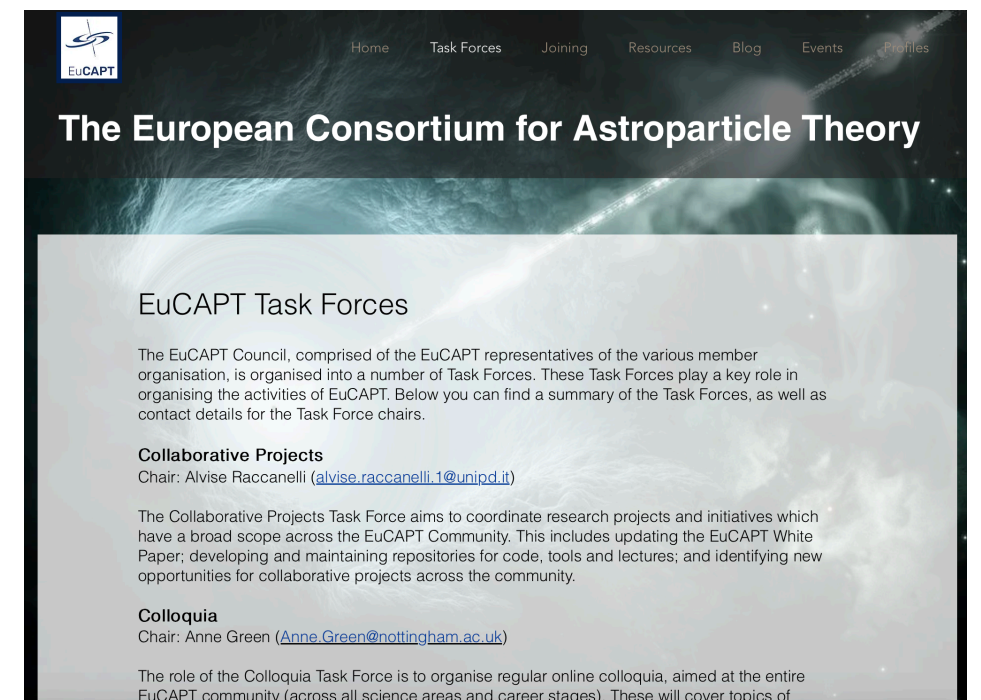
Mission:

- Maintain and promote the EuCAPT Website
- Provide accessible up-to-date information both to the public and EuCAPT membership
- Encouraging engagement and cross-pollination across the EuCAPT Community

Key activities:

- Keeping website up to date
- Producing a blog and Video Profiles of prominent EuCAPT members

Please come and give us feedback / suggestions at the poster session!





Workshop TF

Chair: Matteo Fasiello. Members: A. Ibarra, I. Lopes, J. Said, F. Urban.

Mission: sponsoring impactful international workshops on the most exciting new developments in astro-particle theory and cosmology.

The sponsorship includes:

- **Access to EuCAPT funds** to support the participation of EuCAPT members to the workshop. Early career researchers will be given priority.
- **Access to EuCAPT's formidable dissemination and outreach platforms** to advertise the workshop

- A panel of international experts can provide organisers with **input and guidance on all aspects** of the workshop organisation including research topics, speakers, diversity & gender balance, dissemination/outreach, logistics. Other

Examples

- Securing extra financial support (help exploring other possibilities such as Cost Actions to cover travel expenses);
- Soft skills component (we are in contact with excellent, experienced, professionals);
- Prizes (best talk etc... help navigating various possibilities, including proceedings).

We encourage those interested in setting up a program with EuCAPT sponsorship in 2025 to contact us via the dedicated for on the EuCAPT website (or just email any of us!)

In selecting the programs to sponsor, EuCAPT will take into account: 1) the expected scientific impact and the timeliness of the proposed program; 2) the attention and effort devoted to diversity aspects of the workshop; 3) the effort placed on enhancing dissemination and outreach during the program.

Questions we'd like to discuss with you

- Given that much is going on on many fronts in astroparticle physics and cosmology, many sub-communities are become rather isolated. What are the **opportunities for increased scientific interactions**?
- As a community, are we giving the right support to members that transition into industry? What role can EuCAPT in this?
- Is the **funding landscape** working for astroparticle theory in Europe? Are we spending too much time writing long grant applications? Are too many too long on soft money?

On occasion, EuCAPT has needed to clarify and restrict **membership conditions** based on ethical, democratic grounds. To guide possible future judgements on such issues, we should articulate firmer principles, grounded in the community. What should these be?