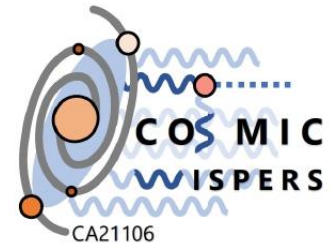


COST Action CA21106

COSMIC WISPerS in the Dark Universe: Theory, astrophysics and experiments

COST21106 aims and structure



The aim of this Action is to coordinate and support WISPs searches (on axions, dark photons, etc.) in a synergic way at the boundary between particle physics, astrophysics and cosmology.



Chair: Alessandro Mirizzi,
Bari University, IT



Vice-Chair: Francesca Calore
Annecy University, FR

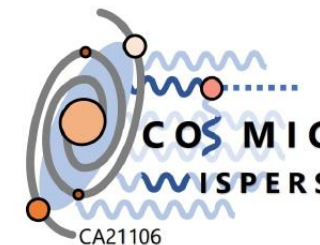
Working groups

	Topic
WG1	WISPs Model Building
WG2	WISPs DM and Cosmology
WG3	WISPs in Astrophysics
WG4	Direct WISPs searches
WG5	Dissemination and Outreach

Horizontal Committees

Topic	Coordinator
Grant Evaluation Committee	Venelin Kozhuharov (Sofia Univ., BG)
Young Researchers and Innovators Representative Council	Pierluca Carenza (Stockholm Univ., SW)
Gender and Diversity Advisor	Deniz Sunar Cerci (Adiyaman Univ., TR)

WG1: Theory and Model Building

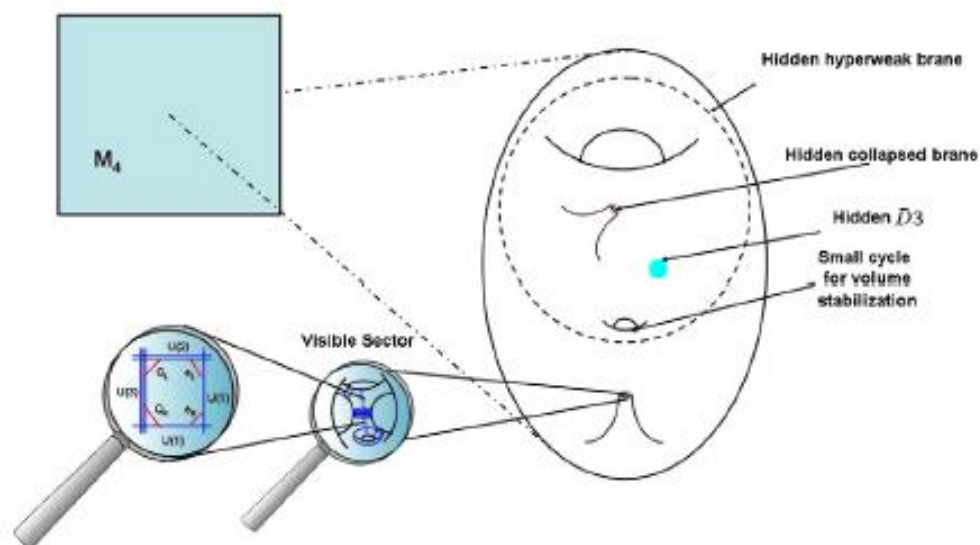


Determine the nature, number, masses and couplings of WISPs that arise in well-motivated theories of fundamental physics, and in particular within string compactifications that join moduli stabilisation with (semi)-realistic matter sectors

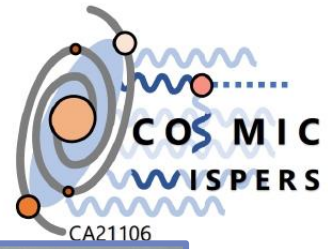
Leader: Michele Cicoli,
Bologna University, IT



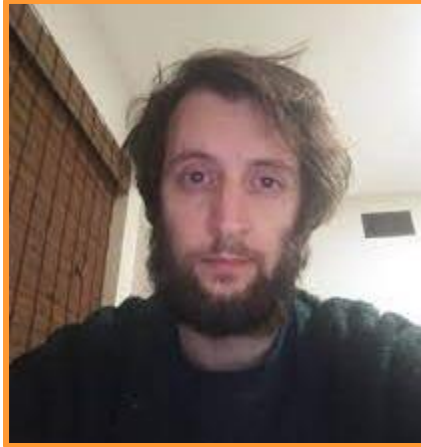
Deputy: Ilaria Brivio,
Bologna University, IT
and Zurich University, CH



WG2: Dark Matter and Cosmology



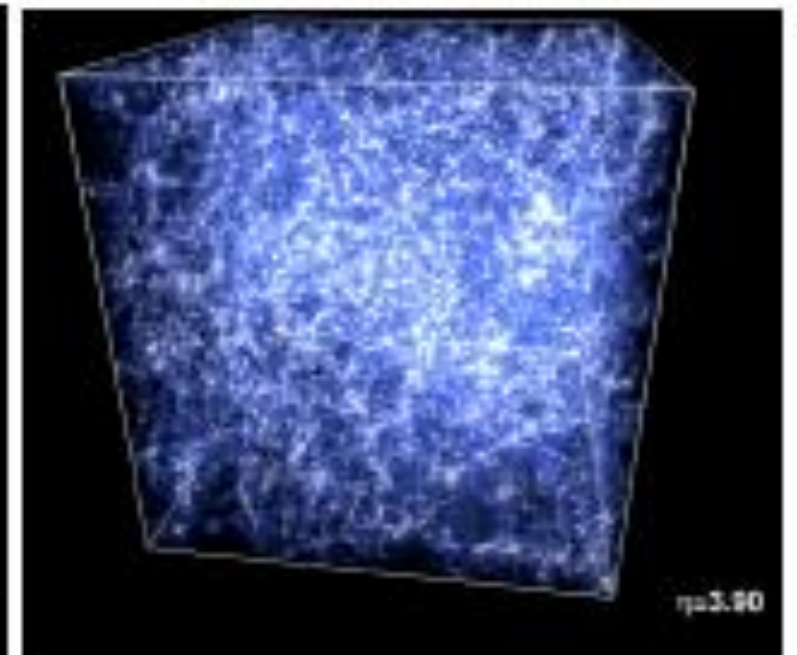
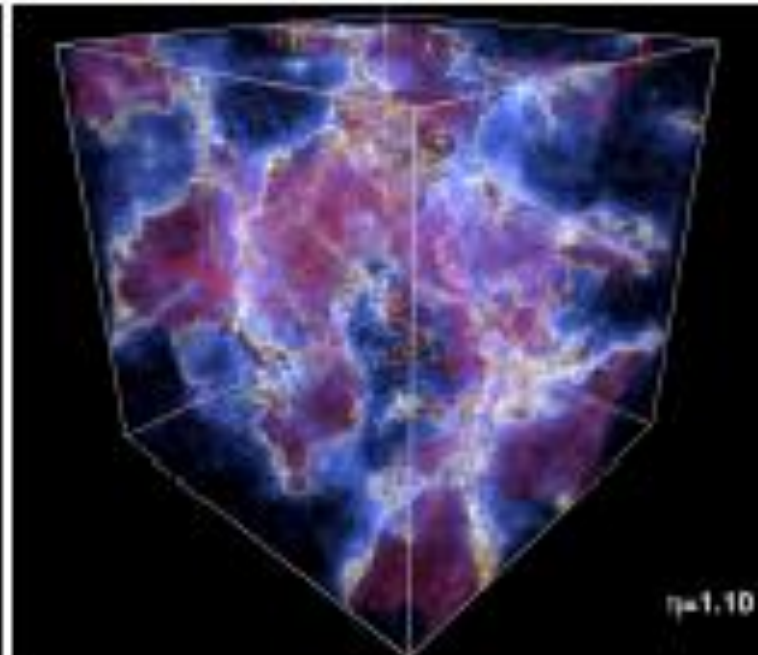
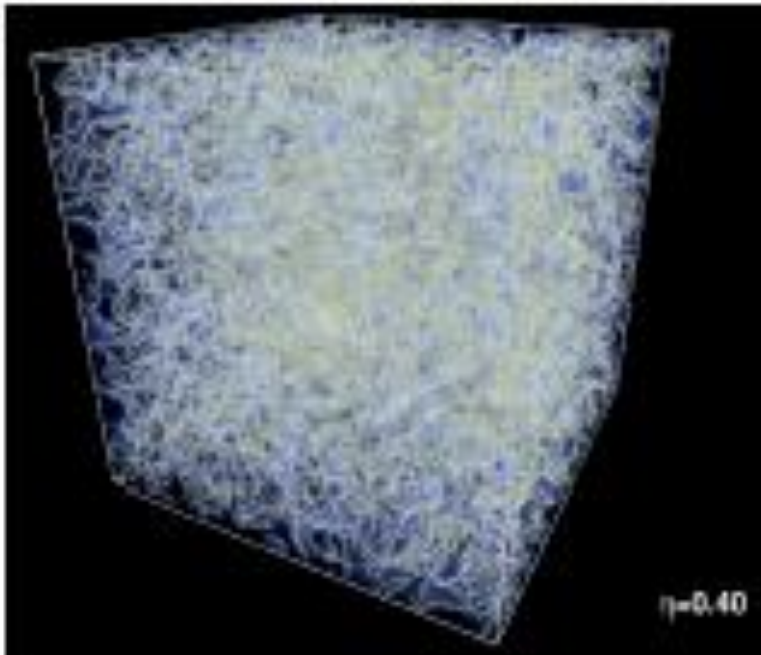
Obtain precise predictions of axion and WISP DM relic abundance and identify distinguishing features of WISP DM in Large Scale Structure data



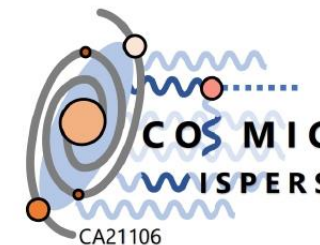
Leader: Edoardo Vitagliano,
Hebrew University, IL



Deputy: Javier Redondo
Zaragoza University, ES



WG3: WISPs in Astrophysics



Deepen the studies of the signatures of WISPs in astroparticle physics. These include WISP oscillations into photons, WISP-induced energy loss in stellar systems and signatures from gravitational waves and from primordial black-hole superradiance.

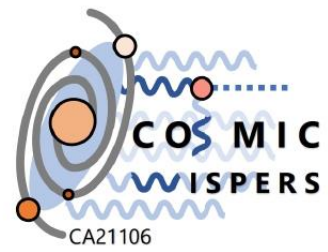
Leader: Andrea Caputo,
CERN, CH



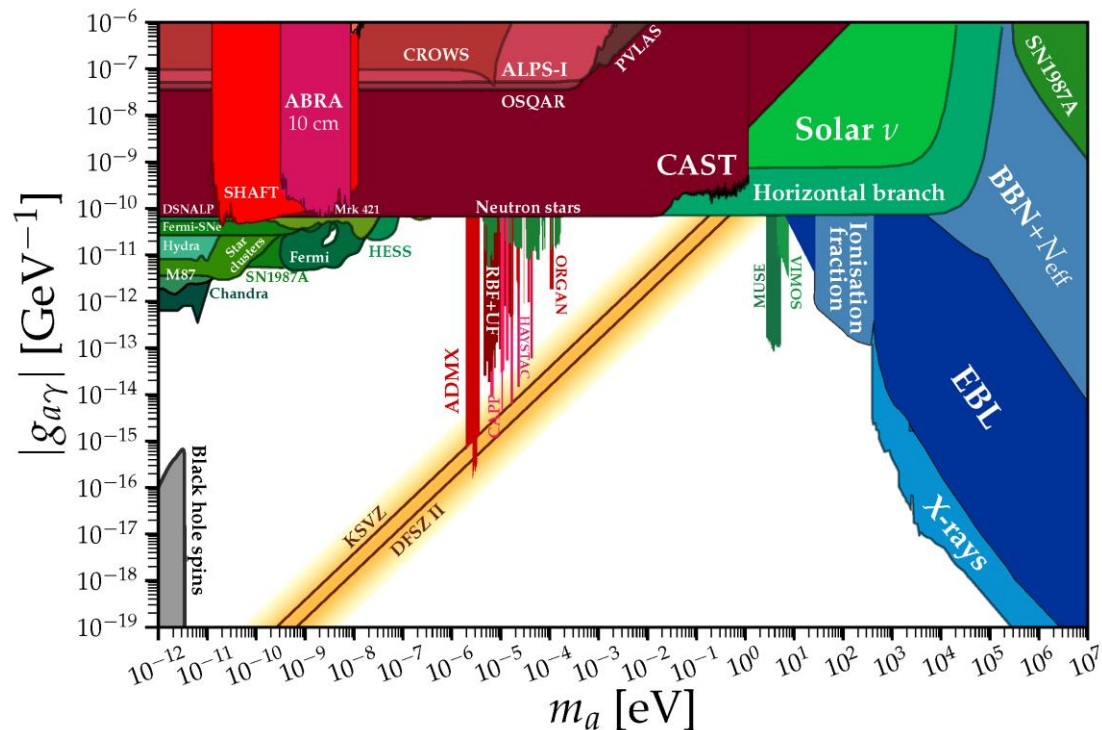
Deputy: Oscar Straniero,
INAF, IT



WG4: Direct WISPs Searches



Produce a complete, updated and revised summary of the status of WISP searches, highlighting parts of the parameter space, models or couplings that are not under test by present or future searches. Outline a roadmap to WISP discovery and a way to disentangle among different WISP models



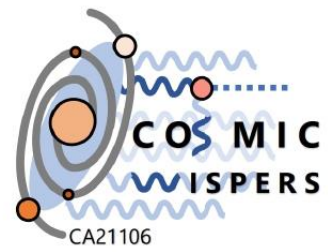
Leader: Claudio Gatti,
LNF, INFN, IT



Deputy: Marin Karuza,
Rijeka University, HR



WG5: Dissemination and Outreach



Enhance the dissemination and communication of the results, and to structure outreach activities to attract public awareness to the challenges and achievements in astro-particle physics.

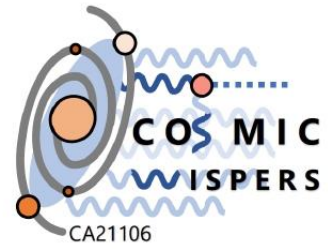
Leader: Olga Mena,
Valencia University, ES



Deputy: Loredana Gastaldo,
Heidelberg University, DE



Science Communication Plan



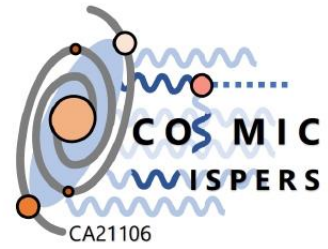
Or why it is relevant to communicate about the Action

A few examples:

- Research has been **scattered** across Europe
- Urgent need for coordinated and joint effort to build a **collaborative platform** linking science, industry and management
- Raise **awareness**
- Bring added value of belonging to a **multidisciplinary network** involving **numerous countries**
- To spark **new collaborations**



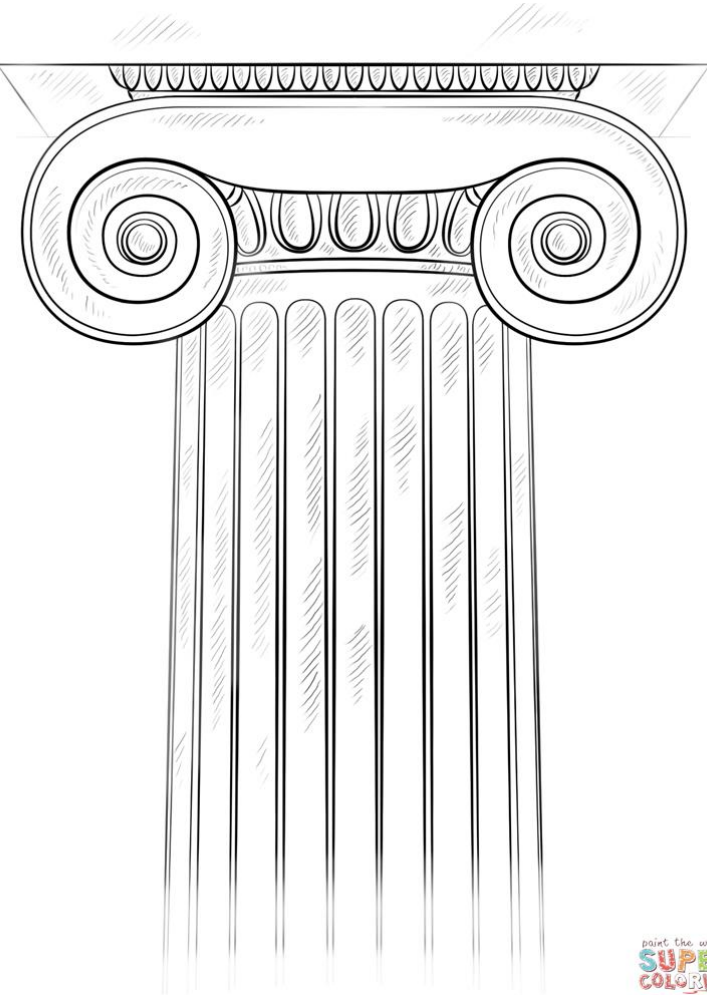
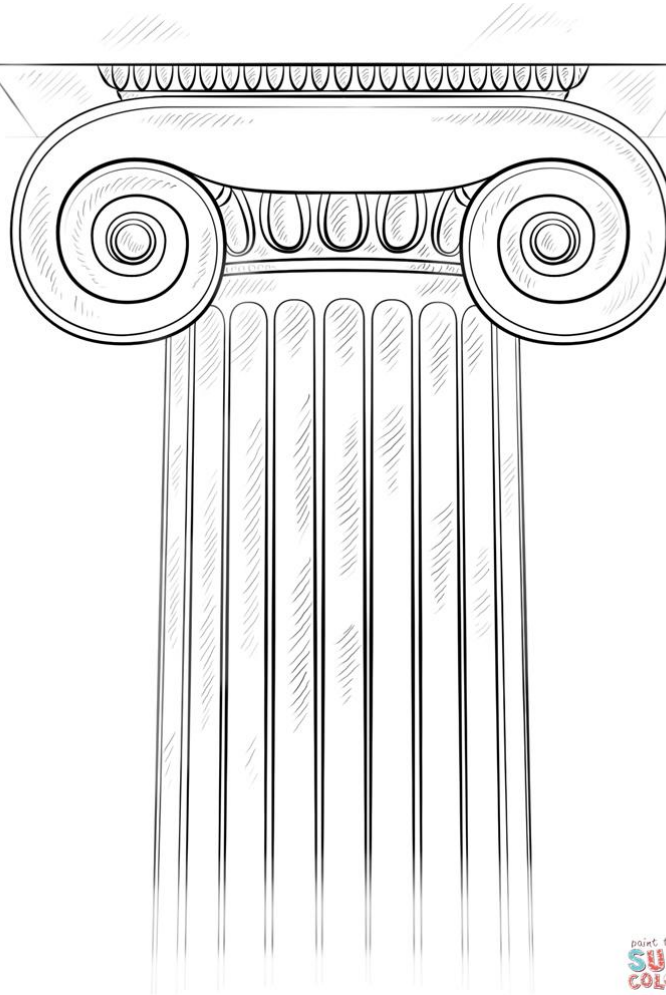
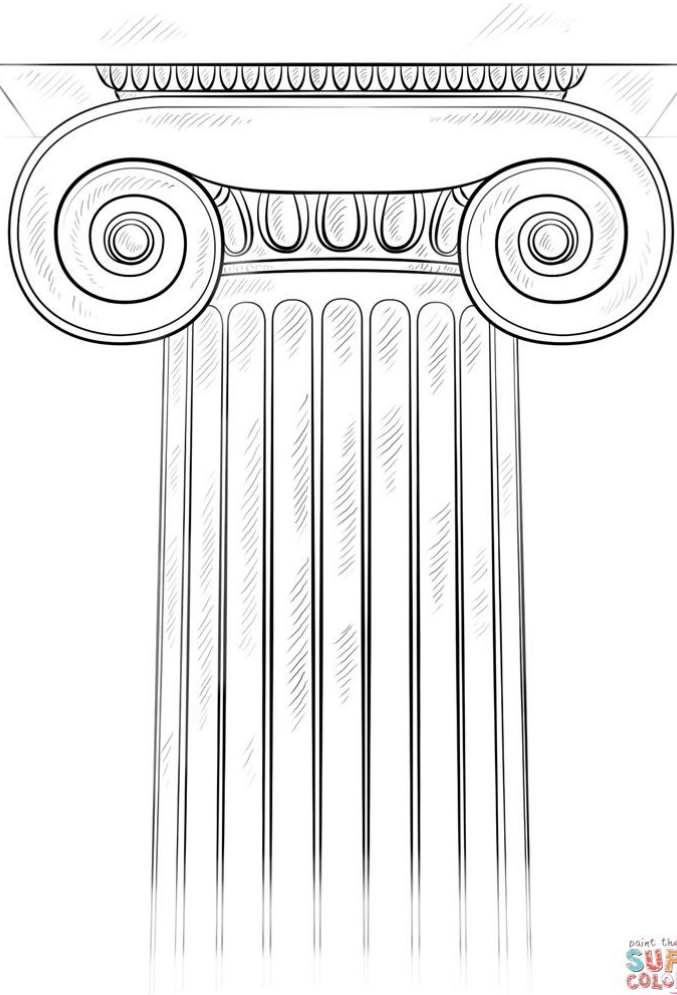
3 Pillars



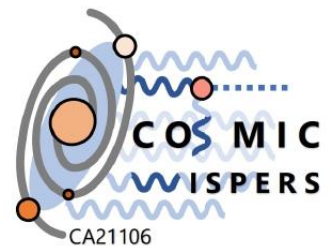
Communication

Dissemination

Valorization



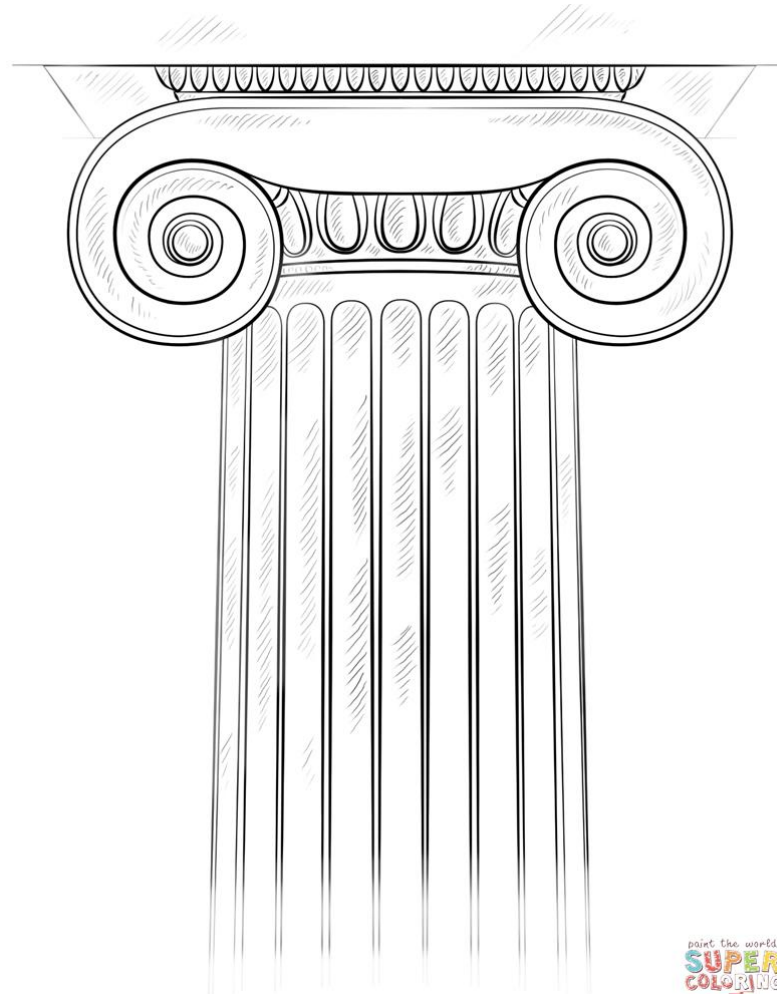
3 Pillars



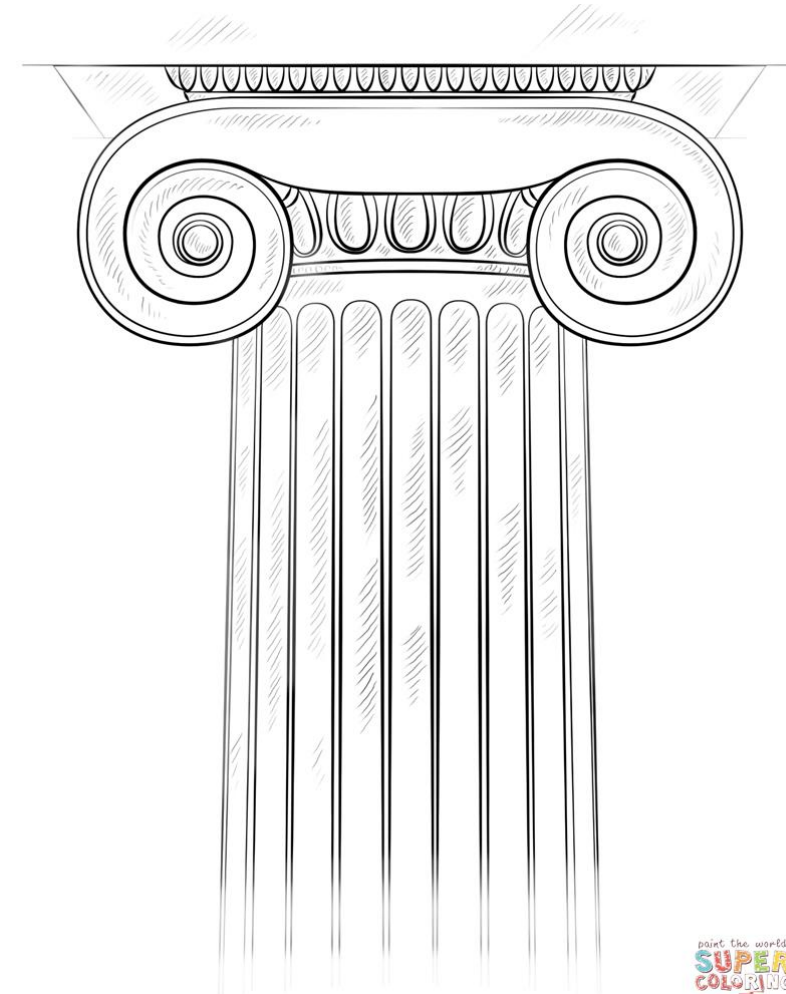
Communication

The communication goal of the Action is to share the motivations and the achievements of WISPs related research with policy makers and the public at a level that can be understood by non-experts.

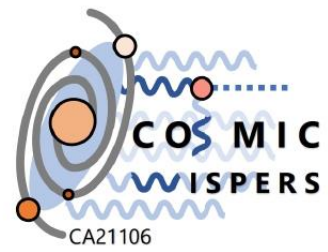
Dissemination



Valorization



3 Pillars



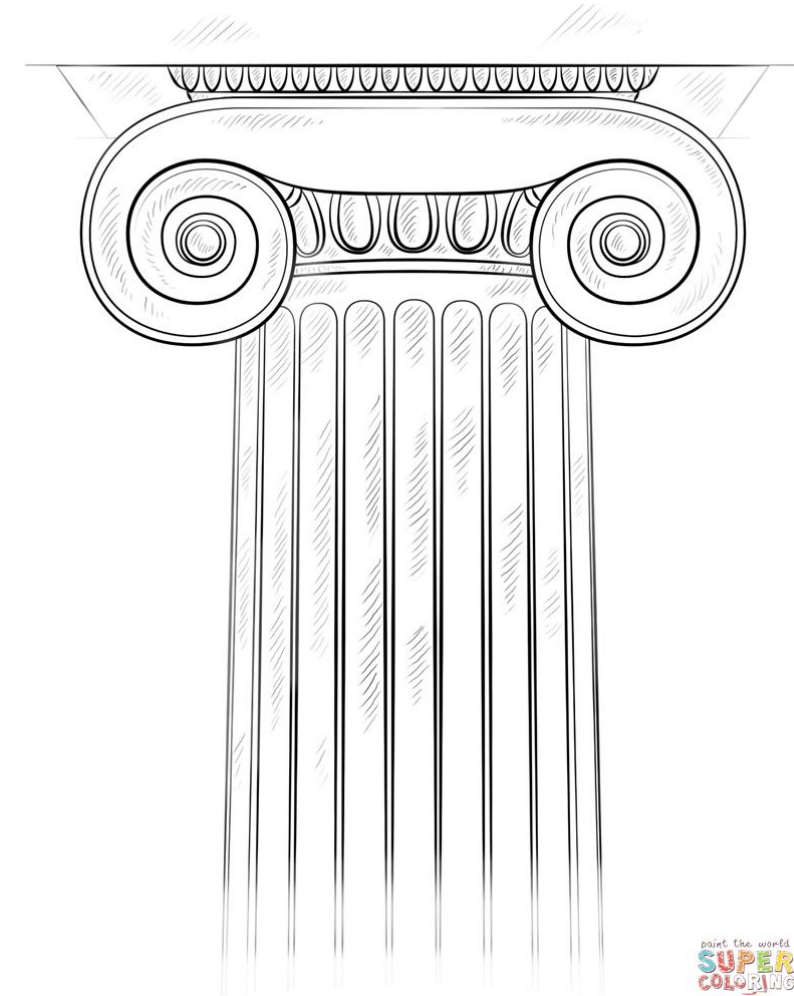
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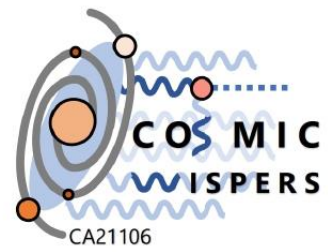
Dissemination

Make research performed within groups in CA21106 and results obtained by joint efforts to reach high impact in the scientific community and funding agencies

Valorization



3 Pillars



Communication

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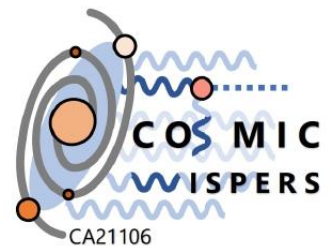
Dissemination

Make research performed within groups in CA21106 and results obtained by joint efforts to reach high impact in the scientific community and funding agencies

Valorization

Attract Small and Medium Size Enterprises (SMEs) as well as funding agencies to support technological developments for WISPs related experiments

Who can contribute



Working group	Communication	Dissemination	Valorization
WG1 WISPs Model Building	✓	✓	
WG2 WISPs DM and Cosmology	✓	✓	
WG3 WISPs in Astrophysics	✓	✓	
WG4 Direct WISPs searches	✓	✓	✓
WG5 Dissemination and Outreach	✓	✓	

NOT ONLY WG5!

Meetings

- Kick-off meeting 23 – 24 Feb. 2023, Frascati LNF
<https://agenda.infn.it/event/33570/>

Public talk by Caterina Braggio about
“Axion Searches with Quantum
Technologies” (in Italian)

- Annual Conference 05 – 08 Sept. 2023, Bari
(+Management Committee Meeting)
<https://agenda.infn.it/event/33570/>

Public talk by Andrea Caputo about
“Dark Matter, Gravitational Wave and
Black holes” (in Italian)

- Training School 11 – 14 Sept. 2023, Lecce
<https://agenda.infn.it/event/34190/>

37 registered students



Übersicht	Topics and Lecturers
Topics and Lecturers	
Proceedings	
Tagesordnung	
Poster	
Anmeldung	
Venue	
List of Hotels	
Eligibility for financial support	
International Organizing Committee	
COST Action "COSMIC WISPers" (CA21106)	
1st General Meeting of	
	"Axion theory and production in the early universe". Lecturer: Kiwoon Choi (IBS, Daejeon). Trainer: Nicole Righi (King's College, London)
	"Axion cosmology and cosmo bounds". Lecturer: Ciaran O'Hare (Sidney Univ.). Trainer: Mathieu Kaltschmidt (Zaragoza Univ.)
	"WISPs from stars". Lecturer: Georg Raffelt (MPI, Munich). Trainer: Andrea Caputo (CERN)
	"Axion experiments". Lecturer: Giuseppe Ruoso (INFN, Padua). Trainer: Antonios Gardikiotis (Patras Univ.)
	"Topics in science communication". Lecturer: Giuliana Galati (Bari Univ.).






On-line Events and Communication

- Journal Club + presentation of ongoing projects

März 2023		
	07. März	María Benito, "JC March - María Benito"
Februar 2023		
	07. Feb.	Sebastian Hoof, "JC February - Sebastian Hoof"
Dezember 2022		
	13. Dez.	Journal Club December

- WG meeting about every month
- Monthly e-mail with papers and events

- Monthly Online Colloquium

Juni 2023		
	21. Juni	In search for ultralight (pseudo)scalars and other dark matter wannabes
Mai 2023		
	31. Mai	Axion dark matter: A perspective for the post-inflationary scenario
April 2023		
	17. Apr.	Neutron stars as axion laboratories
März 2023		
	29. März	Revealing Structure in the Axiverse
Februar 2023		
	01. Feb.	Light, Feebly Interacting Particles: Progress and Expectations

Council of Early Investigators to coordinate Journal Club, social media (Twitter) and organize in presence and virtual events

Communication Material

Webpage

<https://cosmicwispers.eu/>



Poster & Brochure

COST ACTION
COSMIC WISPer
(CA21106)

COSMIC WISPer in the Dark Universe:
Theory, Astrophysics and Experiments

Key information:

COST Action: An interdisciplinary open network, offering opportunities for researchers to meet and discuss ideas

Main Focus: Weakly interacting slim particles (WISPer): theory, cosmology, astrophysics, experiments

Countries: Currently 35 countries from Europe and beyond involved

Researchers: Over 150 researchers involved

Funding: The network is funded by the COST Association (European Cooperation in Science and Technology)

Funding period: November 2022-October 2026

Activities: Working Group Meetings, Training Schools and Short Term Scientific Missions

WORKING GROUPS

WG 1: WISPer Model Building

WG 2: WISPer Dark Matter and Cosmology

WG 3: WISPer in Astrophysics

WG 4: Direct WISPer searches

WG 5: Dissemination and Outreach

Join the Action Working Groups at:
<https://www.cost.eu/actions/CA21106/>

Contacts
Chair of the Action:
Prof. Alessandro Mirizzi (Bari Univ., IT)
(alessandro.mirizzi@ba.infn.it)
e-mail: cosmic.wispers@gmail.com
twitter: @CosmicWispers

webpage:
cosmicwispers.eu

COST
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

COST ACTION
COSMIC WISPer
(CA21106)

COSMIC WISPer in the Dark Universe:
Theory, Astrophysics and Experiments

Funded by the European Union

COST
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

COSMIC WISPer
CA21106

Applications to join COST 21106

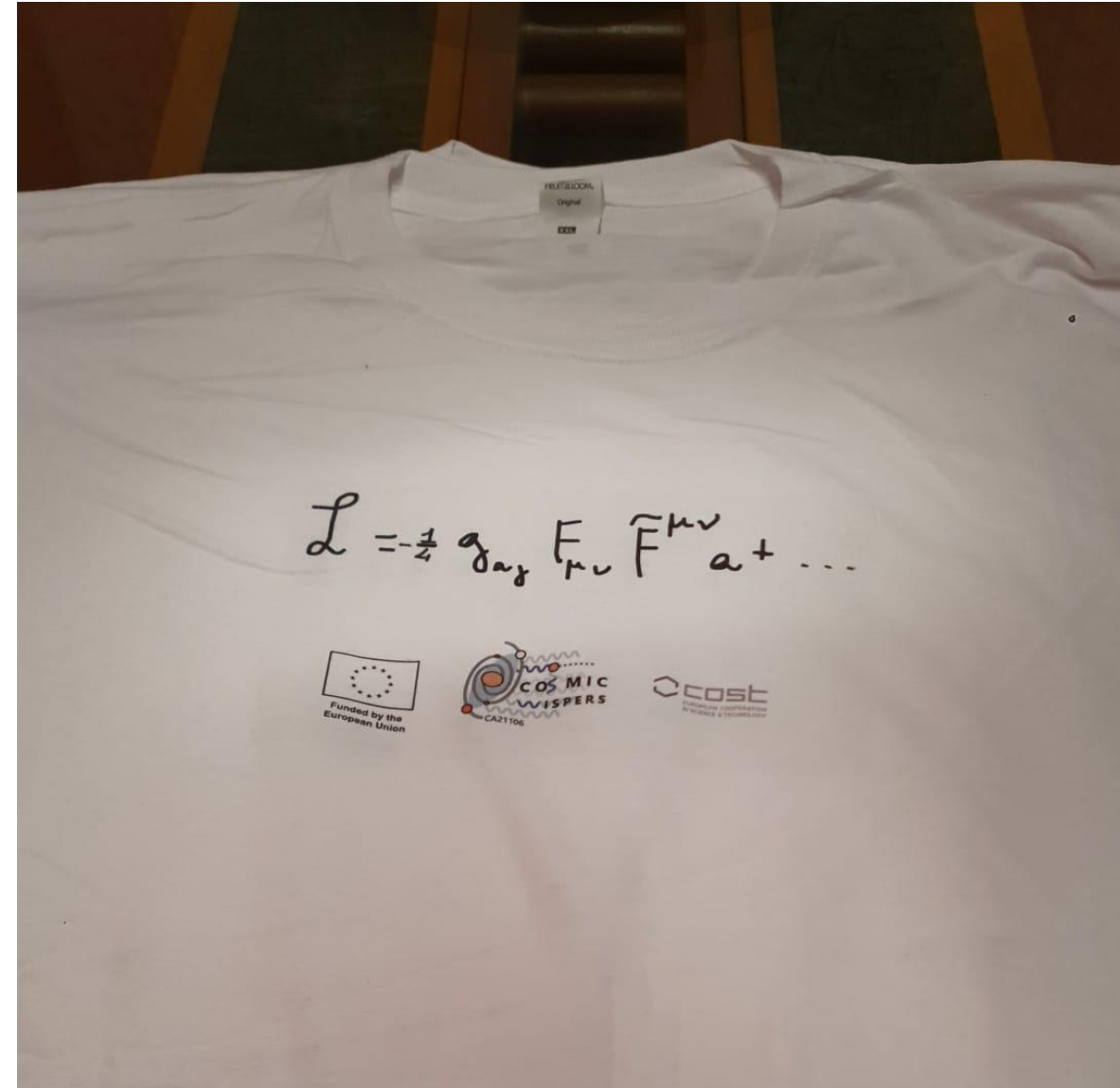
<https://cosmicwispers.eu/>

Join us

Are you interested in joining the Cosmic WISPer Action?

- Write at cosmicwispers@gmail.com
- Register to the Working Groups on the [CA21106 webpage at COST](#)
- Contact the Chair of the Action
Prof. Alessandro Mirizzi
e-mail: alessandro.mirizzi@ba.infn.it

Very dynamic community both in theory and experiments
and exciting events are waiting for you!



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*Thank you
for the attention!*

