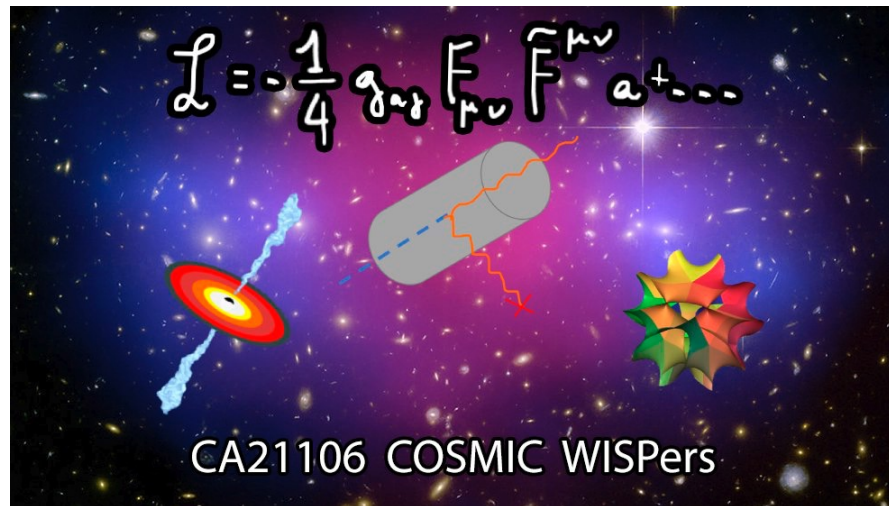
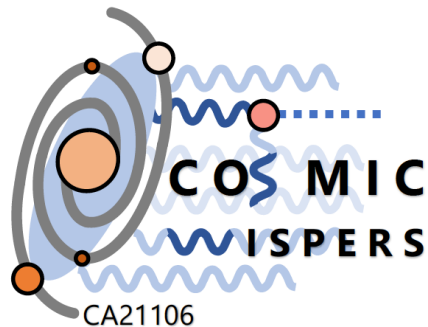


COST ACTION CA21106

COSMIC WISPerS in the Dark Universe:

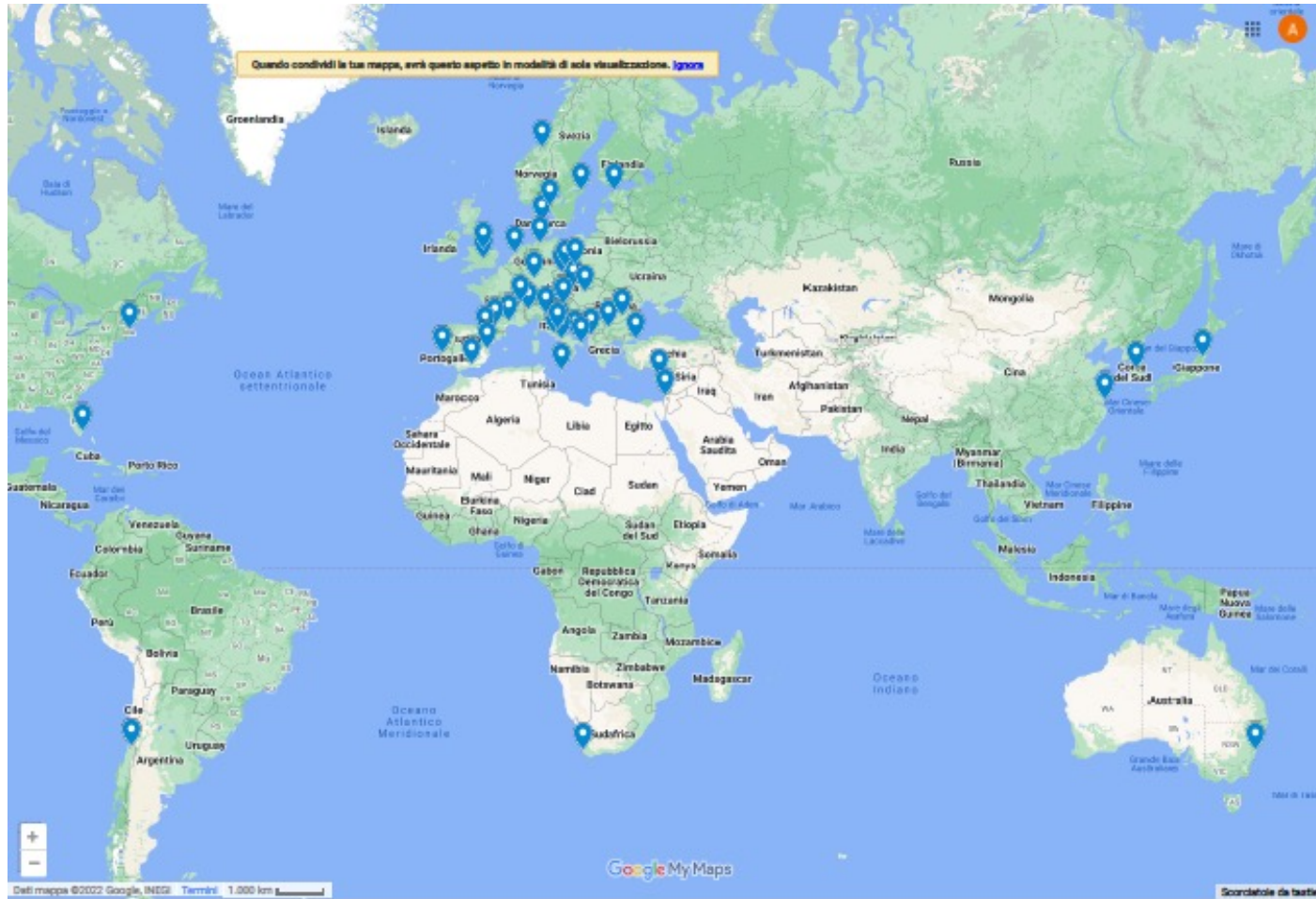
Theory, astrophysics and experiments

Alessandro Mirizzi
(Bari Univ. & INFN, Italy)



Funded by the
European Union

COSMIC WISPErs NETWORK



~ 70 *proposers*

Currently > 390
participants!

COST Country(25) : Albania , Austria , Bulgaria , Croatia , Cyprus , Czech Republic , Denmark , Estonia , France , Germany , Hungary , Israel , Italy , Malta , Netherlands , Norway , Poland , Portugal , Romania , Slovenia , Spain , Sweden , Switzerland , Turkey , United Kingdom
International Partner Country(7) : Australia, Chile, China, Japan, South Africa, South Korea, United States

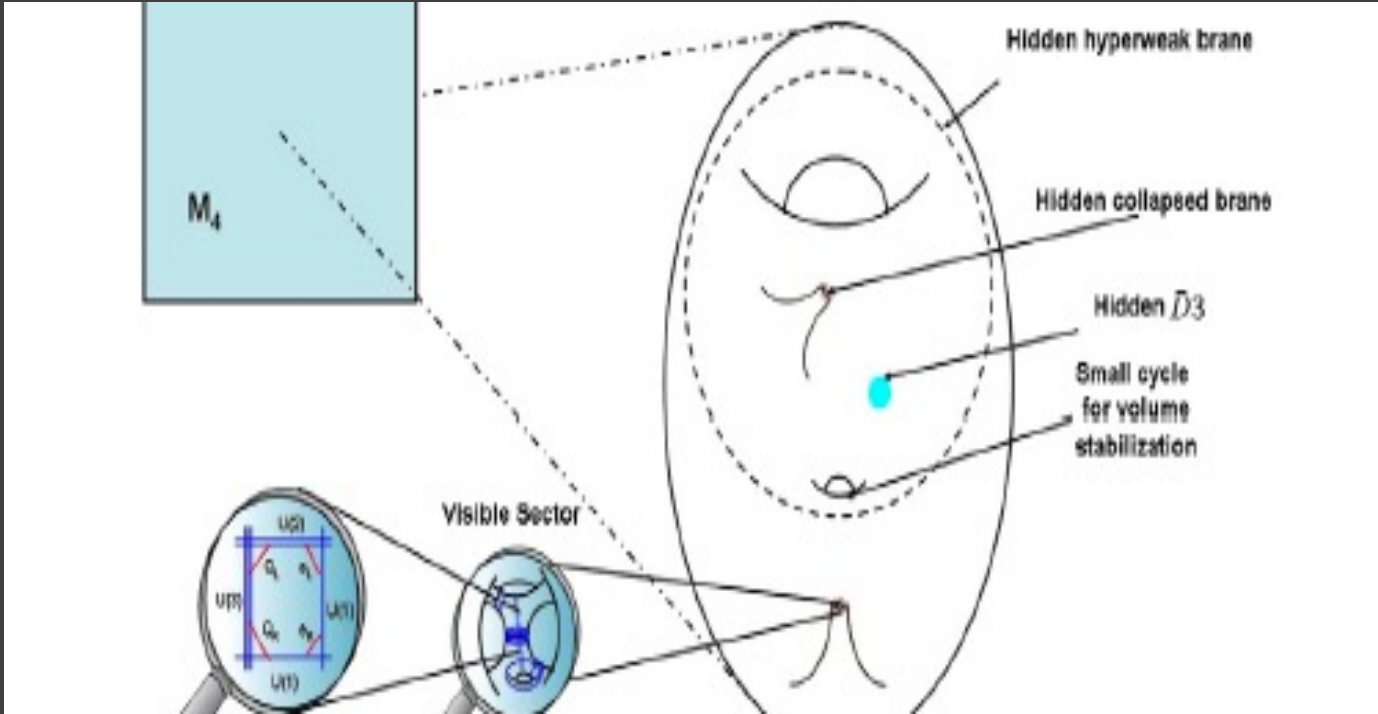
WISPs

WISPs are very Weakly Interacting Slim ($m < \text{GeV}$) Particles which emerge in several extensions of the Standard Model of Particle Physics.

CHALLENGE

The aim of this Action is an exhaustive study of these WISPs, notably axions, axion-like particles (ALPs) and dark photons, ranging from their theoretical underpinning, over their indirect observational consequences in astrophysics, to their search at colliders and beam-dump and their direct detection in laboratory experiments.





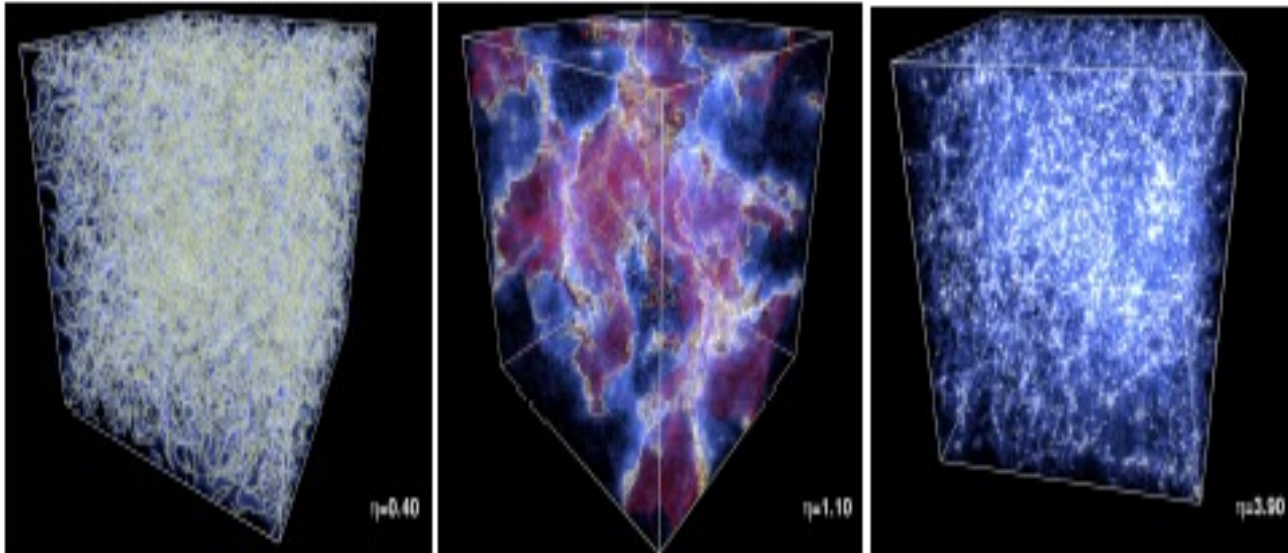
WG Leaders

Michele Cicoli (Bologna Univ., IT)
Sophie Renner (Glasgow Univ., UK)

100 participants

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



WG Leaders

Edoardo Vitagliano (Padua Univ., IT)
Marco Goerghetto (DESY, DE)

204 participants

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

A satellite with two large solar panel arrays is shown in space. The Earth's horizon is visible at the bottom of the frame. The background is a starry field with a bright orange nebula in the upper left corner.

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.

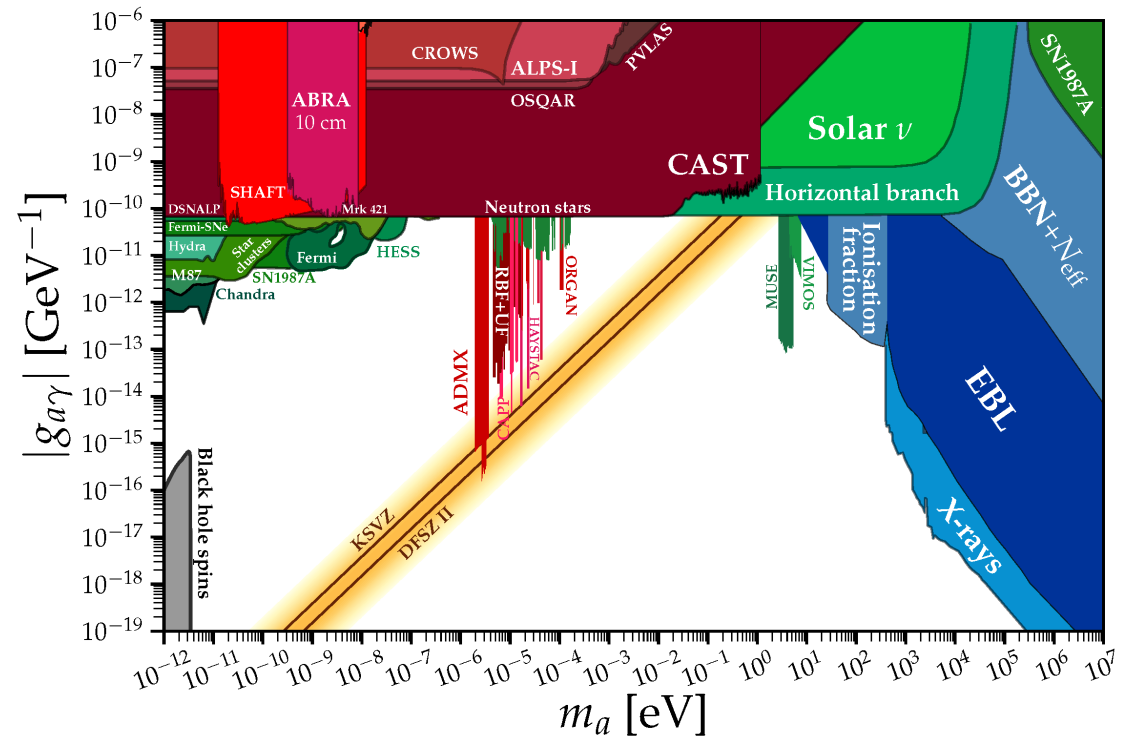
WG Leaders

Maurizio Giannotti (Zaragoza U., ES)
Oscar Straniero (INAF, IT)

127 participants

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



WG Leaders

Claudio Gatti (LNF, IT)
Marin Karuza (Rijeka Univ. , HR)

129 participants

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.



WG Leaders

Olga Mena (IFIC, ES)

Science Communication Coordinator

Loredana Gastaldo (Heidelberg Univ , DE)

75 participants

HORIZONTAL COMMITTEES



Grant Evaluation Committee: provides to the Action MC a proposal of selected grants and amounts for their approval

Grant Awarding Coordinator: **Venelin Kozhuharov** (Sofia Univ., BG)



Young Researchers and Innovators Representative Council: involve the ECI in the management of the Action and in organization of the Activities

Coordinator: **Joshua Eby** (Stockholm Univ., SW)



Gender and Diversity Advisor: monitor the gender balance and provide a plan to implement gender balance

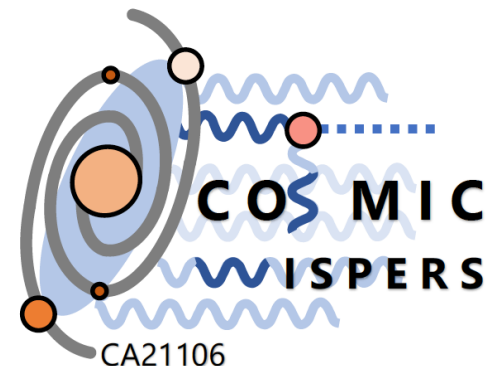
Deniz Sunar Cerci (Adiyaman Univ., TR)

- **Journal Club Organizers:** Maria Benito Castano (Tartu Obs., EE), Michele Tammaro (Jozef Stefan Inst., SI)
- **Colloquium Organizers:** Arturo de Giorgi (Inst. De Fis. Teor, ES), Giuseppe Lucente (Bari Univ., IT) , Hugo Tercas (Ist. de Plasma, Lisboa, PT)
- **Newsletter Editors:** Damiano Fiorillo (NBI, Copenhagen, DE), Alessandro Lella (Bari Univ, IT)

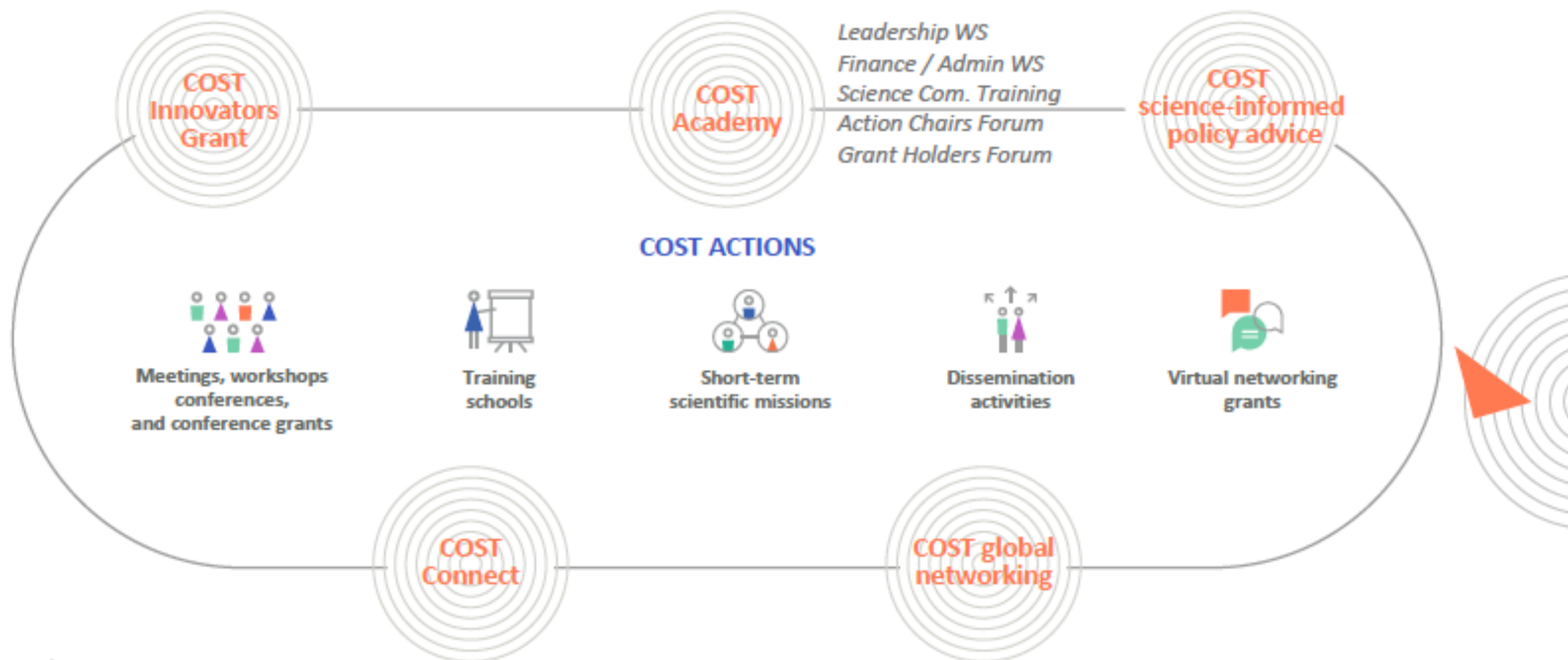
All events announced on the webpage www.cosmicwispers.eu

WHAT YOU CAN DO FOR THE ACTION?

- Advertise the Action on social media and through press release
- Ask your colleagues and collaborators to register
- Post interesting events and papers on twitter and to the e-mail
- Put acknowledgements on your publication: "This article/publication is based upon work from COST Action COSMIC WISPerS CA 21106, supported by COST (European Cooperation in Science and Technology)"
- Use Action Logo and COST visual identity in your talks
-



COST support beyond the COST Action



2024 EVENTS



1-2 Febr: Working Group Meeting
(DESY Hamburg, DE)



3-6 Sept: II General Meeting + MC Meeting
(Istanbul, TR)

**WELCOME TO THE CA21106 TRAINING SCHOOL IN
LJUBLJANA !**

