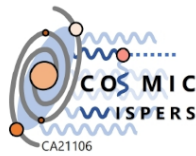


# 3rd General Meeting of COST Action COSMIC WISPerS (CA21106)



Funded by the  
European Union

## Report of Contributions

Contribution ID: 95

Type: **not specified**

## **CP, or not CP, that is the question**

*Tuesday 9 September 2025 09:20 (40 minutes)*

**Presenter:** RINGWALD, Andreas (DESY)

**Session Classification:** WG1 (Theory)

Contribution ID: 96

Type: **not specified**

## Open string axiverse

*Tuesday 9 September 2025 10:00 (40 minutes)*

**Presenter:** VILLADORO, Giovanni

**Session Classification:** WG1 (Theory)

Contribution ID: 97

Type: **not specified**

## Testing interactions in a scalar dark sector

*Tuesday 9 September 2025 11:00 (40 minutes)*

**Presenter:** TEIXEIRA, Elsa

**Session Classification:** WG1 (Theory)

Contribution ID: 98

Type: **not specified**

# **The Thorium-229 revolution: nuclear clocks as quintessometers**

*Tuesday 9 September 2025 11:40 (40 minutes)*

**Presenter:** DELAUNAY, Cedric (LAPTh)

**Session Classification:** WG1 (Theory)

Contribution ID: 99

Type: **not specified**

## **Axion Quality: Challenges and Pathways to Improvement**

*Tuesday 9 September 2025 12:20 (40 minutes)*

**Presenter:** MESCIA, Federico

**Session Classification:** WG1 (Theory)

Contribution ID: **100**

Type: **not specified**

# Topological Portals to the Dark Sector

*Tuesday 9 September 2025 15:30 (30 minutes)*

**Presenter:** SELIMOVIC, Nudzeim (INFN Padova)

**Session Classification:** WG1 (Theory)

Contribution ID: **101**

Type: **not specified**

## **Cosmic superstrings in large volume compactifications**

*Tuesday 9 September 2025 16:00 (30 minutes)*

**Presenter:** VILLA, Gonzalo (DAMTP - University of Cambridge)

**Session Classification:** WG1 (Theory)



Contribution ID: **102**

Type: **not specified**

## **Growth of cosmic strings with field-dependent tension**

*Tuesday 9 September 2025 16:50 (30 minutes)*

**Presenter:** BRUNELLI, Luca (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** WG1 (Theory)

Contribution ID: **103**

Type: **not specified**

## **Cosmic strings and domain walls of the QCD quark condensate with and without a hidden axion**

*Tuesday 9 September 2025 17:20 (30 minutes)*

**Presenter:** STUHLFAUTH, Anja (Max Planck Institute for Physics)

**Session Classification:** WG1 (Theory)

Contribution ID: **104**

Type: **not specified**

## **Scalar Fields with Quadratic Couplings to Matter around Cavities**

*Tuesday 9 September 2025 15:30 (20 minutes)*

**Presenter:** MACDONALD, Angus (University of Nottingham)

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: **105**

Type: **not specified**

## **Dark Matter Freeze-In and Small-Scale Observables: Novel Mass Bounds and Viable Particle Candidates**

*Tuesday 9 September 2025 15:50 (20 minutes)*

**Presenter:** LENOCI, Alessandro (The Hebrew University of Jerusalem)

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: **106**

Type: **not specified**

## **Constraining ALPs with Cosmic Microwave Background Polarization Birefringence**

*Tuesday 9 September 2025 16:10 (20 minutes)*

**Presenter:** GALAVERNI, Matteo (Vatican Observatory & INAF/OAS Bologna)

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: **107**

Type: **not specified**

## **WISP Dark Matter: What's Missing?**

*Tuesday 9 September 2025 17:50 (20 minutes)*

**Presenter:** BENITO, María (Tartu Observatory, University of Tartu)

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: **108**

Type: **not specified**

## **Dark matter production from axion portal**

*Tuesday 9 September 2025 17:10 (20 minutes)*

**Presenter:** SASSI, Tommaso (INFN Sezione di Firenze, Università degli Studi di Firenze)

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: **109**

Type: **not specified**

## **X-ray observations and their applications to the physics of axions (or other WISPs)**

*Wednesday 10 September 2025 09:30 (40 minutes)*

**Presenter:** RUZ, Jaime

**Session Classification:** WG3 (Astrophysics)



Contribution ID: **110**

Type: **not specified**

## **Axion superradiance**

*Wednesday 10 September 2025 10:10 (40 minutes)*

**Presenter:** CHADHA-DAY, Francesca (IPPP, Durham University)

**Session Classification:** WG3 (Astrophysics)

Contribution ID: **111**

Type: **not specified**

## **Radio observations and their applications to the physics of axions (or other WISPs)**

*Wednesday 10 September 2025 11:20 (40 minutes)*

**Presenter:** REGIS, Marco (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** WG3 (Astrophysics)

Contribution ID: **112**

Type: **not specified**

## **Theoretical progress on SN axions.**

*Wednesday 10 September 2025 12:00 (40 minutes)*

**Presenter:** SPRINGMANN, Konstantin (TU Munich)

**Session Classification:** WG3 (Astrophysics)

Contribution ID: 113

Type: **not specified**

## **X-ray Searches for Axions: The M82 and Betelgeuse Case Studies**

*Wednesday 10 September 2025 15:30 (20 minutes)*

**Presenter:** CANDON, Francisco

**Session Classification:** WG3 (Astrophysics)

Contribution ID: 114

Type: **not specified**

## **Probing axion-like particles with multimessenger observations of neutron star mergers**

*Wednesday 10 September 2025 15:50 (20 minutes)*

**Presenter:** LECCE, Francesca

**Session Classification:** WG3 (Astrophysics)

Contribution ID: 115

Type: **not specified**

## **Axion production and conversion in astrophysical transients**

*Wednesday 10 September 2025 16:10 (20 minutes)*

**Presenter:** GIL MUYOR, Ángel

**Session Classification:** WG3 (Astrophysics)

Contribution ID: **116**

Type: **not specified**

## **Relaxing supernova constraints: how nucleophobic axions survive finite-density corrections.**

*Wednesday 10 September 2025 17:00 (20 minutes)*

**Presenter:** FIORENTINO, Vincenzo

**Session Classification:** WG3 (Astrophysics)

Contribution ID: 117

Type: **not specified**

## **Sensitivity of CTAO to axion-like particles from blazars: a machine learning approach**

*Wednesday 10 September 2025 17:40 (20 minutes)*

**Presenter:** SCHIAVONE, Francesco

**Session Classification:** WG3 (Astrophysics)



Contribution ID: **118**

Type: **not specified**

## **Probing axion-like particles with very-high-energy gamma rays: Insights from MAGIC and LST-1**

*Wednesday 10 September 2025 17:20 (20 minutes)*

**Presenter:** BATKOVIC, Ivana

**Session Classification:** WG3 (Astrophysics)

Contribution ID: **119**

Type: **not specified**

## **ARCHIMEDES experiment**

*Wednesday 10 September 2025 15:30 (20 minutes)*

**Presenter:** D'URSO, Domenico

**Session Classification:** WG4 (Experiments)

Contribution ID: **120**

Type: **not specified**

## **New Opportunities for Ultralight DM Search with Stochastic Fluctuations**

*Thursday 11 September 2025 09:30 (40 minutes)*

**Presenter:** KIM, Hyungjin

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: **121**

Type: **not specified**

## **Cosmological tests of the nature of dark matter**

*Thursday 11 September 2025 10:10 (40 minutes)*

**Presenter:** ROGERS, Keir

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: 122

Type: **not specified**

## **Cracks in the Standard Cosmological Model: Anomalies, Tensions, and Hints of New Physics**

*Thursday 11 September 2025 11:20 (40 minutes)*

**Presenter:** DI VALENTINO, Eleonora (University of Sheffield)

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: **123**

Type: **not specified**

## **Gravitational probes of ultralight dark matter**

*Thursday 11 September 2025 12:00 (40 minutes)*

**Presenter:** BLUM, Kfir

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: 124

Type: **not specified**

## **Axions explain the formation of supermassive black holes at cosmic dawn**

*Friday 12 September 2025 12:40 (40 minutes)*

**Presenter:** SIKIVIE, Pierre

**Session Classification:** Concluding talk

Contribution ID: 125

Type: **not specified**

## **Preliminary ALPs sensitivity projections for the RES-NOVA Observatory**

*Friday 12 September 2025 09:00 (40 minutes)*

**Presenter:** FERREIRO IACHELLINI, Nahuel

**Session Classification:** WG4 (Experiments)



Contribution ID: 126

Type: **not specified**

## Probing new physics with slow and trapped molecules

*Friday 12 September 2025 09:40 (40 minutes)*

**Presenter:** HOEKSTRA, Steven (University of Groningen, and Nikhef, The Netherlands)

**Session Classification:** WG4 (Experiments)

Contribution ID: **127**

Type: **not specified**

## **WISPFI experiment**

*Friday 12 September 2025 10:40 (40 minutes)*

**Presenter:** MAROUDAS, Marios

**Session Classification:** WG4 (Experiments)

Contribution ID: **128**

Type: **not specified**

## **PADME Experiment**

*Friday 12 September 2025 11:20 (40 minutes)*

**Presenter:** DI MECO, Elisa

**Session Classification:** WG4 (Experiments)

Contribution ID: **129**

Type: **not specified**

**TBA**

**Presenter:** YUN, Seokhoon

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: 130

Type: **not specified**

## **Probing Ultralight Scalars through Compact Stars and Precision Tests of Gravity**

*Wednesday 10 September 2025 18:00 (20 minutes)*

**Presenter:** PODDAR, Tanmoy

**Session Classification:** WG3 (Astrophysics)

Contribution ID: **131**

Type: **not specified**

## **Recent Developments in Axion Detection with MADMAX**

*Wednesday 10 September 2025 15:50 (20 minutes)*

**Presenter:** IVANOV, Anton

**Session Classification:** WG4 (Experiments)

Contribution ID: **132**

Type: **not specified**

## **Advances in optomechanics**

*Thursday 11 September 2025 15:30 (30 minutes)*

**Presenter:** KRALJ, Nenad

**Session Classification:** Technology Forum

Contribution ID: **133**

Type: **not specified**

## Satellites & Space Missions

*Thursday 11 September 2025 16:00 (30 minutes)*

**Author:** TOSHEV, Lubomir (EnduroSat)

**Co-author:** DANCHEV, Viktor (CTO EnduroSat)

**Presenters:** TOSHEV, Lubomir (EnduroSat); DANCHEV, Viktor (CTO EnduroSat)

**Session Classification:** Technology Forum



Contribution ID: 134

Type: **not specified**

## **Precision test of fundamental physics with matter wave interferometers**

*Wednesday 10 September 2025 17:00 (20 minutes)*

**Presenter:** POLI, Nicola (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** WG4 (Experiments)

Contribution ID: 135

Type: **not specified**

# Hunting for Dark Matter using Levitated Superconductors

*Wednesday 10 September 2025 17:20 (20 minutes)*

**Presenter:** FOWLER, Jackson

**Session Classification:** WG4 (Experiments)

Contribution ID: 136

Type: **not specified**

## **Magnetometry: from single measurements to network of magnetometers**

*Thursday 11 September 2025 16:30 (30 minutes)*

**Presenter:** BENEV, Boyan (Benev Science & Technology Ltd)

**Session Classification:** Technology Forum

Contribution ID: 137

Type: **not specified**

## Emission of spin-2 Particles from the Sun

*Tuesday 9 September 2025 17:30 (20 minutes)*

**Presenter:** GARCIA CELY, Camilo (IFIC (CSIC-University of Valencia))

**Session Classification:** WG2 (Dark matter & Cosmology)

Contribution ID: **138**

Type: **not specified**

## WG1 Report

*Tuesday 9 September 2025 14:30 (30 minutes)*

**Presenter:** CICOLI, Michele (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Round Table

Contribution ID: **139**

Type: **not specified**

## Discussion

*Tuesday 9 September 2025 15:00 (30 minutes)*

**Session Classification:** Round Table

Contribution ID: **140**

Type: **not specified**

## **WG3 Report**

*Wednesday 10 September 2025 14:30 (30 minutes)*

**Presenters:** LUCENTE, Giuseppe (SLAC); GIANNOTTI, Maurizio

**Session Classification:** Round Table

Contribution ID: **141**

Type: **not specified**

## Discussion

*Wednesday 10 September 2025 15:00 (30 minutes)*

**Session Classification:** Round Table



Contribution ID: **142**

Type: **not specified**

## WG2 Report

*Thursday 11 September 2025 14:30 (30 minutes)*

**Presenters:** BENITO, María (Tartu Observatory, University of Tartu); KALTSCHMIDT, Mathieu (CAPA, Universidad de Zaragoza)

**Session Classification:** Round Table

Contribution ID: **143**

Type: **not specified**

## Discussion

*Thursday 11 September 2025 15:00 (30 minutes)*

**Session Classification:** Round Table

Contribution ID: **144**

Type: **not specified**

## **WG4 report**

*Friday 12 September 2025 12:00 (40 minutes)*

**Presenter:** KARUZA, Marin (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Round Table

Contribution ID: **145**

Type: **not specified**

## **CA21106 Introduction**

*Friday 12 September 2025 15:00 (20 minutes)*

**Presenter:** MIRIZZI, Alessandro (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Management Committee Meeting

Contribution ID: **146**

Type: **not specified**

## **WG1 report**

*Friday 12 September 2025 15:20 (20 minutes)*

**Presenter:** CICOLI, Michele (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Management Committee Meeting

Contribution ID: **147**

Type: **not specified**

## WG2 Report

*Friday 12 September 2025 15:40 (20 minutes)*

**Presenters:** BENITO, María (Tartu Observatory, University of Tartu); KALTSCHMIDT, Mathieu (CAPA, Universidad de Zaragoza)

**Session Classification:** Management Committee Meeting

Contribution ID: **148**

Type: **not specified**

## **WG3 Report**

*Friday 12 September 2025 16:00 (20 minutes)*

**Presenter:** GIANNOTTI, Maurizio

**Session Classification:** Management Committee Meeting

Contribution ID: **149**

Type: **not specified**

## **WG4 report**

*Friday 12 September 2025 16:20 (20 minutes)*

**Presenter:** KARUZA, Marin (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Management Committee Meeting



Contribution ID: **150**

Type: **not specified**

## **WG5 report**

*Friday 12 September 2025 16:40 (20 minutes)*

**Presenters:** GASTALDO, Loredana (Kirchhoff Institute for Physics, Heidelberg University); RE-QUEJO, Olga

**Session Classification:** Management Committee Meeting

Contribution ID: **151**

Type: **not specified**

## **Grant awarding coordinator report**

*Friday 12 September 2025 17:20 (20 minutes)*

**Presenter:** KOZHUHAROV, Venelin (Univerity of Sofia "St. Kl. Ohridski" & LNF-INFN)

**Session Classification:** Management Committee Meeting

Contribution ID: **152**

Type: **not specified**

## ECI Committee Report

*Friday 12 September 2025 17:40 (20 minutes)*

**Presenter:** ZAMORO, Marta Fuentes

**Session Classification:** Management Committee Meeting

Contribution ID: **153**

Type: **not specified**

## **Report from Gender and Diversity Advisor**

*Friday 12 September 2025 18:00 (20 minutes)*

**Presenter:** SUNAR CERCI, Deniz

**Session Classification:** Management Committee Meeting

Contribution ID: **154**

Type: **not specified**

## **Draft of W&B Plan 2026**

*Friday 12 September 2025 18:20 (20 minutes)*

**Presenter:** MIRIZZI, Alessandro (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Management Committee Meeting

Contribution ID: 155

Type: **not specified**

## **Public talk: COSMIC WISPers in the Dark Universe**

*Thursday 11 September 2025 18:00 (1h 15m)*

**Author:** DIMITROVA, Kalina

**Presenters:** DIMITROVA, Kalina; KOZHUHAROV, Venelin

**Session Classification:** WG5 (Dissemination and Outreach)

Contribution ID: **156**

Type: **not specified**

## Q&A

**Session Classification:** WG5 (Dissemination and Outreach)

Contribution ID: **157**

Type: **not specified**

# **Bridging nuclear physics and neutron stars at the LHC**

*Wednesday 10 September 2025 16:10 (20 minutes)*

**Presenter:** MIHAYLOV, Dimitar

**Session Classification:** WG4 (Experiments)