



Stockholm
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APPEC

Latest News from APPEC

AstroParticle Physics
European Consortium

Dr. Alexander Burgman
Stockholm University

Partikeldagarna 2024

2024-10-22

What is APPEC?

AstroParticle Physics European Consortium

appec.org/



*APPEC is a consortium of funding agencies, national government institutions, and institutes from 18 European countries, responsible for **coordinating and funding national research efforts in astroparticle physics.***

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What is Dark Matter?

What is Dark Energy?

What caused our Universe to become dominated by matter and not anti-matter?

Can we probe deeper into the earliest phases of our Universe's existence?

What are the properties of neutrinos?

Can we identify the sources of high-energy neutrinos?

What is the origin of cosmic rays?

Do protons decay?

What do gravitational waves tell us about General Relativity and cosmology?

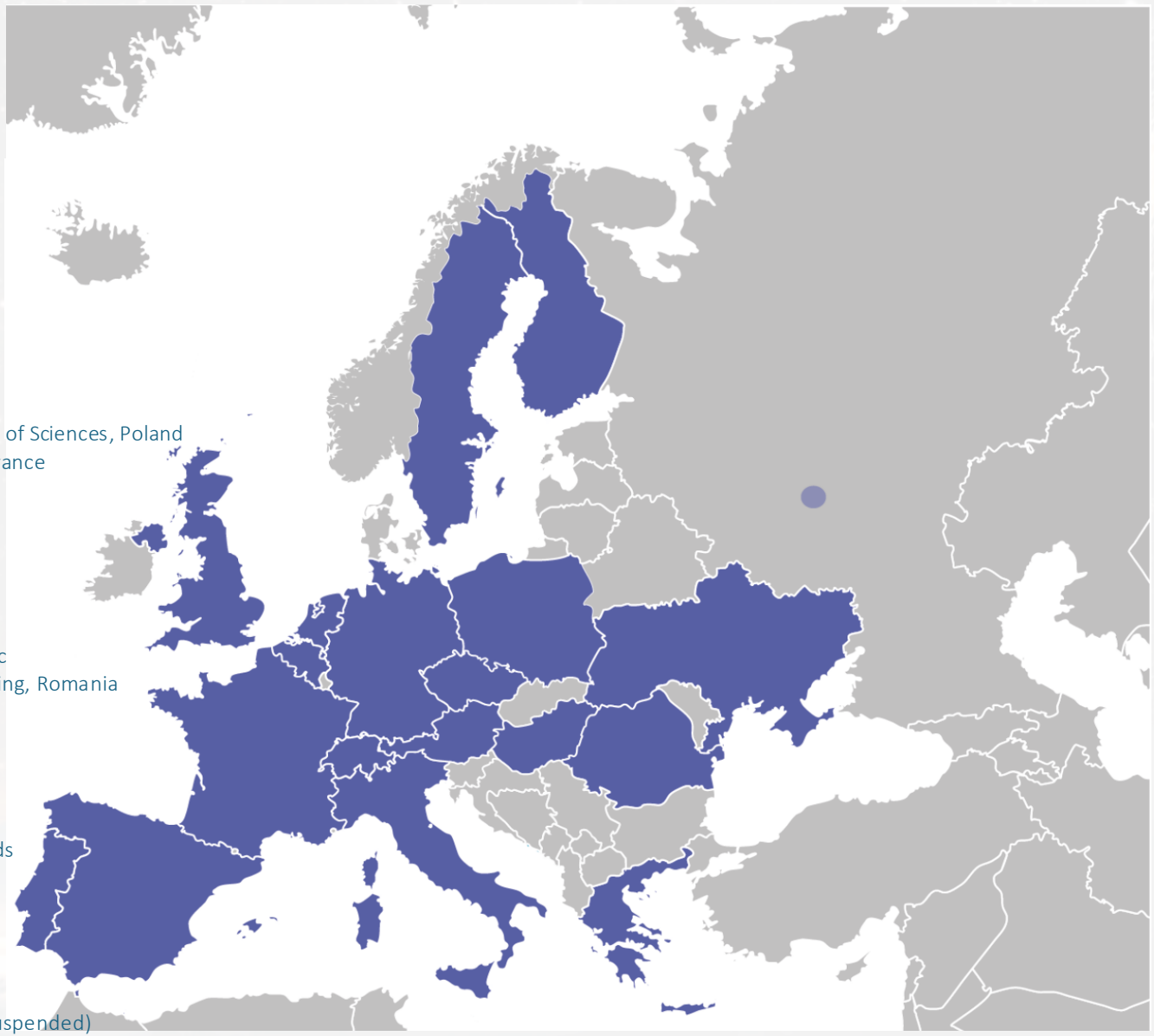
What will multi-messenger astronomy teach us?

APPEC Consortium

18 member countries

- (+1 suspended)
- 22 funding agencies
- In discussion with possible new members

- CAMK:** Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences, Poland
- CEA:** Commissariat à l'énergie atomique et aux énergies alternatives, France
- CNRS:** Centre National de la Recherche Scientifique, France
- DESY:** Deutsches Elektronen-Synchrotron, Germany
- FRS-FNRS:** Fonds de la Recherche Scientifique – FNRS, Belgium
- FWO:** Fonds Wetenschappelijk Onderzoek, Belgium
- FCT:** Fundação para a Ciência e a Tecnologia, Portugal
- HIP:** Helsinki Institute of Physics, Finland
- IEAP-CTU:** Institute of Experimental and Applied Physics, Czech Republic
- IFIN-HH:** Horia Hulubei National Institute of Physics & Nuclear Engineering, Romania
- INFN:** Istituto Nazionale di Fisica Nucleare, Italy
- KIT:** Karlsruher Institut für Technologie, Germany
- LSC:** Laboratorio Subterráneo de Canfranc, Spain
- NASU:** National Academy of Sciences of Ukraine, Ukraine
- NOA:** National Observatory of Athens, Greece
- NWO:** The Netherlands Organisation for Scientific Research, Netherlands
- ÖAW:** Austrian Academy of Sciences, Austria
- SNF:** Schweizerische Nationalfonds, Switzerland
- STFC:** Science & Technology Facilities Council, United Kingdom
- VR:** Vetenskapsrådet Swedish Research Council, Sweden
- Wigner RCP:** Wigner Research Center for Physics, Hungary
- Suspended:** **JINR:** Joint Institute for Nuclear Research, Dubna, Russia (suspended)



APPEC Structure

- General assembly
- Joint secretariat
- Scientific advisory committee

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The strategic, decision-making, and supervisory body of APPEC.

Chair:

- **Andreas Haungs (KIT)** (Dec '24) ->
Carlos Peña Garay (LSC)

28 member-representatives:

- Sweden/VR: Alexander Burgman

Invited:

- Chair of APPEC SAC (Aldo Ianni, LNGS-INFN)
- Chair of EuCAPT (Silvia Pascoli, INFN)

Observers: CERN, ESO, Astronet, EPS-HEPP, NuPECC, ECFA

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The executive body of APPEC.

General secretary:

- Katarina Henjes-Kunst (DESY) (Jun '24) ->
Julie Epas (APC Laboratory IN2P3/CNRS)

Heads of functional centres:

- APC
- DESY
- INFN-LNGS
- KIT
- LSC
- Nikhef

APPEC Structure

- General assembly
- Joint secretariat
- **Scientific advisory committee**

Examines and reports on issues of strategic scientific importance, proposes programmes or projects for adoption as activities of APPEC.

Chair: Aldo Ianni (INFN-LNGS)

20 members: representing fields (not countries)

Aldo Ianni (chair)

Mathieu de Naurois (vice chair)

Marica Branchesi

Paula Chadwick

Oliviero Cremonesi

Sijbrand de Jong

Stéphanie Escoffier

Chad Finley

Concha González-García

Aart Heijboer

Dark Matter

High Energy Photons

Gravitational Waves

High Energy Photons

Neutrino Properties

Cosmic Rays

Dark Energy

High Energy Neutrinos

Neutrino Properties

High Energy Neutrinos

Joachim Kopp

Marcin Kuzniak

Ofer Lahav

Sotiris Loucatos

Ioana Maris

Anna Nelles

Fedor Simkovich

Irene Tamborra

Edwige Tournefier

Christian Weinheimer

Theory

Dark Matter

Dark Energy

Cosmology CMB

Cosmic Rays

High Energy Neutrinos

Theory

Theory

Gravitational Waves

Neutrino Properties

European Astroparticle Physics Strategy 2017-2026

21 recommendations endorsed by the astroparticle community, and resource & funding aware – recommendations addressing, in addition to the **scientific issues**, crucial **organisational aspects** as well as important **societal issues** such as **gender balance, education, public outreach and relations with industry.**

Approved in Nov '16.

appec.org/european-astroparticle-physics-strategy-2017-2026/



European Astroparticle Physics Strategy 2017-2026

– Mid-term Update

- Multimessenger observation of neutron star merger
 - Maturing of European gravitational wave telescope
 - Additional developments + covid-19
- Not fully repeat 2017-2026 strategy, but discuss relevant developments since 2017 and **provide an updated set of recommendations.**

Approved in summer '23.

appec.org/mid-term-review/



European Astroparticle Physics Strategy 2027-2036

Time for the next one!

Written by the **SAC**, approved by the **GA**

spring/summer 2025: townhall meeting – start-up

spring/summer 2026: townhall meeting

fall 2026: finalization

winter 2026: approval and announcement

European Astroparticle Physics Strategy 2027-2036

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Now: community survey

- Inviting all astroparticle researchers in Europe: **Ph.D. student -> seniors**

- **Crucial input to the SAC's work**

- <https://forms.office.com/pages/responsepage.aspx?id=TeQQLrnH40OwIBKSSC5Qsr4zgXrpCcxEgny-Mn8AM0pUQUdDUTVQWlpNVVEMjFLSzcYqkRSN1VKMi4u&route=shorturl>

APPEC SAC Roadmap Community Inputs Survey

Thank you for participating in this survey. Your feedback will help shape the future APPEC Roadmap (2027-2036). The scientific and technical topics discussed in the current APPEC Roadmap are listed below as references.

European Astroparticle Physics Strategy 2017-2026
<http://www.appec.org/wp-content/uploads/Documents/Current-docs/APPEC-Strategy-Book-Proof-19-Feb-2018.pdf>

European Astroparticle Physics Strategy 2022-2026 Mid-Term Review
<https://indico.cern.ch/event/1339060/attachments/2742922/47>

Scientific topics

- Cosmic rays
- Gamma rays from cosmic sources
- Neutrino astrophysics
- Gravitational waves
- Dark matter search (direct and indirect)
- Neutrino properties
- Cosmic microwave background and early universe
- Dark energy or alternative theories of gravitation
- Astroparticle theory

Transverse and technical topics

- Multi-messenger observations
- Detectors and infrastructures
- Space technologies
- Computing and data policies
- Open science and citizen science
- Ecological and social impact



JENA – Joint ECFA-NuPECC-APPEC

Join forces not only to solve the questions on the smallest and the largest structures in nature but also to improve on diversity, working conditions and societal impact

JENA Symposia – to discuss common questions and challenges between the organizations

- 1st JENA Symposium
14-16 October 2019 in Orsay, France
- 2nd JENA Symposium
3-6 May 2022 in Madrid, Spain
- 3rd JENA Symposium
8-11 April 2025 at RAL, UK



APPEC takeaways

AstroParticle Physics European Consortium

New European Astroparticle Physics Strategy 2027-2036 upcoming!

- **Town hall May/June 2025**

Location and dates TBA

- **Reply to the survey!**

<https://forms.office.com/pages/responsepage.aspx?id=TeQQLrnH40OwIBKSSC5Qsr4zgXrpCcxEgny-Mn8AM0pUQUdDUTVQWlpNVVEMjFLSzcYQkRSN1VKMi4u&route=shorturl>

Want to know more? APPEC newsletter!

appec.org/latest-news/newsletters/



Thank you



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