

Multi-messenger science in the European Astroparticle Physics Strategy 2017-2026

***Job de Kleuver, APPEC/NWO-I
Groningen, 27 March 2019***

CERN

Informal MoU

ESO/ESA



Treaty



APPEC



Treaty



Astroparticle Physics European Consortium

CERN

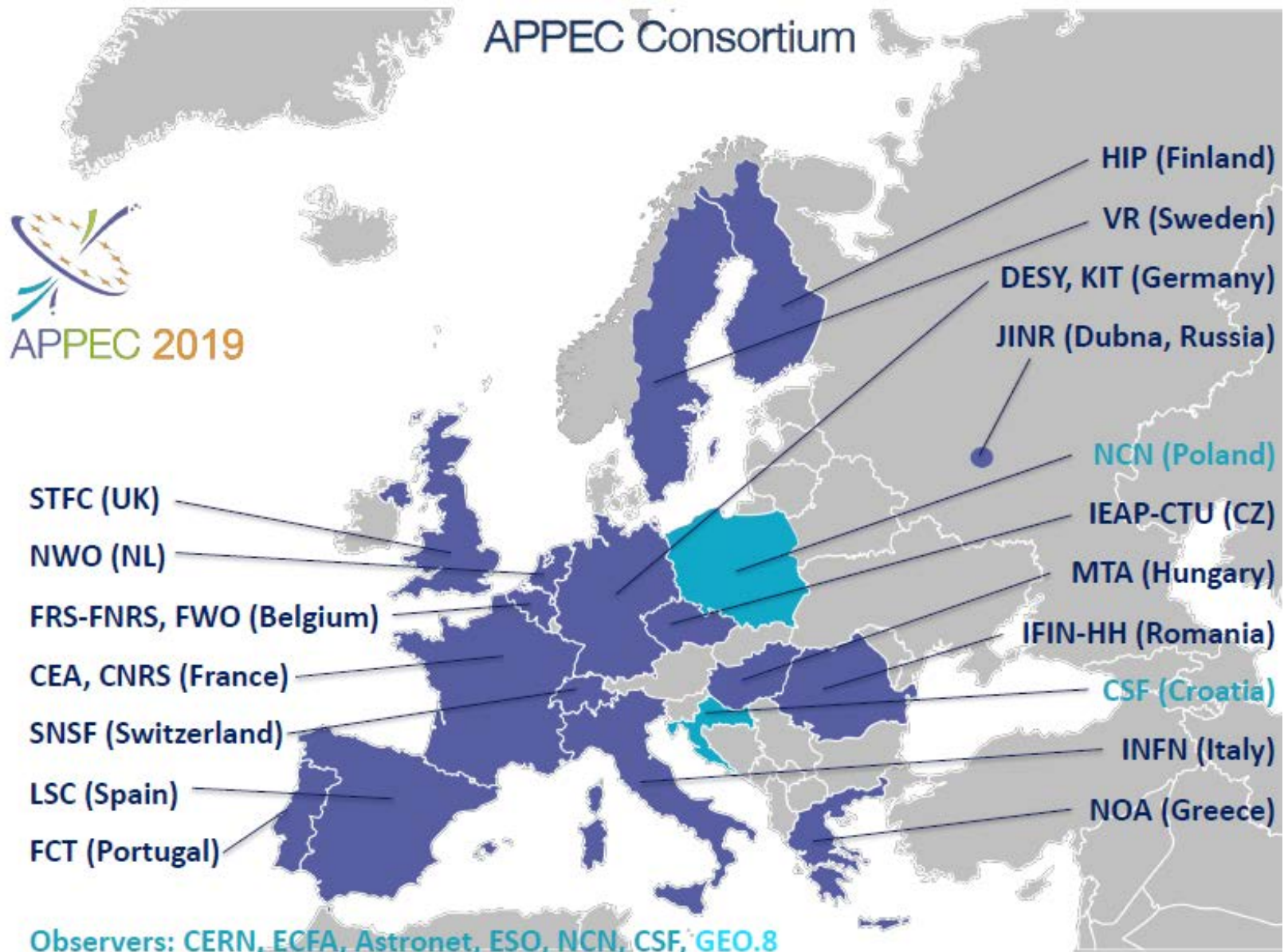
Science prospects

ESO/ESA



APPEC

Astroparticle Physics European Consortium





Astroparticle Physics European Consortium



General Assembly

Teresa Montaruli, Chair

Job de Kleuver, General Secretary

Scientific Advisory Committee

Laura Baudis, Chair

Jocelyn Monroe, vice Chair

Astroparticle Physics European Consortium

Distributed responsibilities of the five APPEC Functional Centers



NWO/Nikhef:
Strategic actions,
Roadmapping

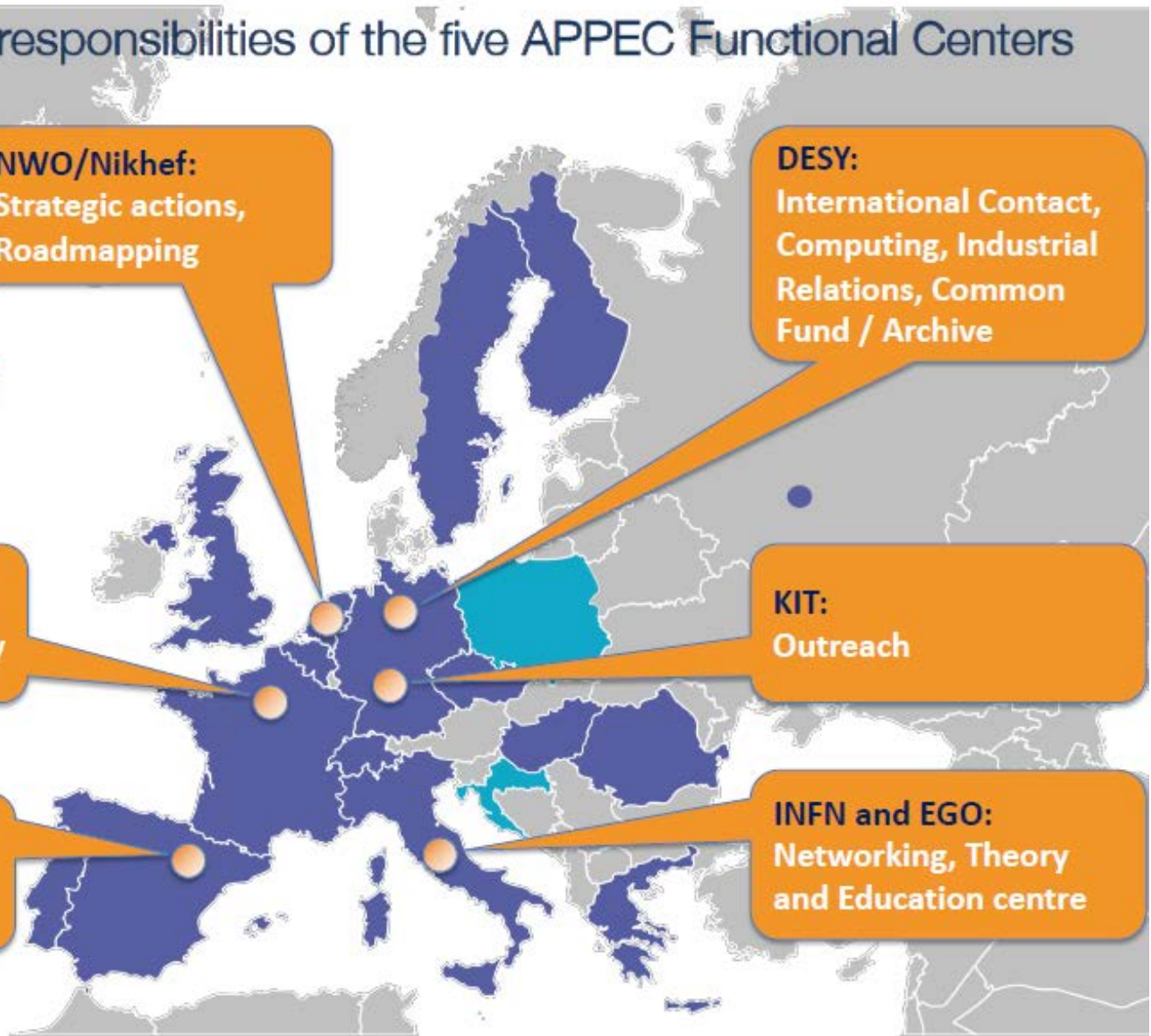
DESY:
International Contact,
Computing, Industrial
Relations, Common
Fund / Archive

APC:
Interdisciplinarity

KIT:
Outreach

LSC:
Electronic Tools

INFN and EGO:
Networking, Theory
and Education centre



Strategic objectives

- **Coordination** of European Astroparticle Physics in Europe through:
 - Development and update of **roadmaps** based on **scientific strategies** and **financial considerations**
 - Mandates to experts panels on **specific challenges**
 - Regular **Town Meetings**
 - Regular **Seminars** with other communities (e.g. APPEC-ECFA-NuPECC, GeO-8, ASTRONET) and **Technology Fora**
 - Express collective views on APP in **international fora**
 - Advice communities in the process towards **establishment of Research Infrastructures and facilities**
 - **Outreach** and **communication**

APPEC's "own" annual cash budget: only 80 k€



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Bright side:

APP investments
~75 M€/year

national funding
partner countries

Opportunities:

- Regional €'s
- EU ERDF
- Growing field
- Collaboration
- Interdisciplinary
- ...

Need for coordination and collaboration



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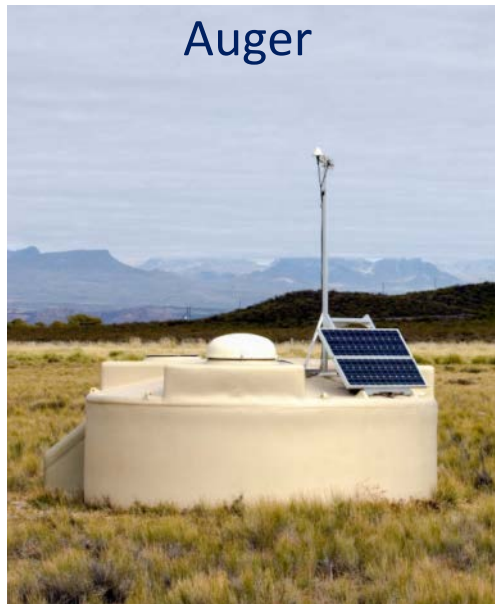
European Astroparticle
Physics Strategy
2017-2026

Roadmap 2017 – 2026

21 recommendations



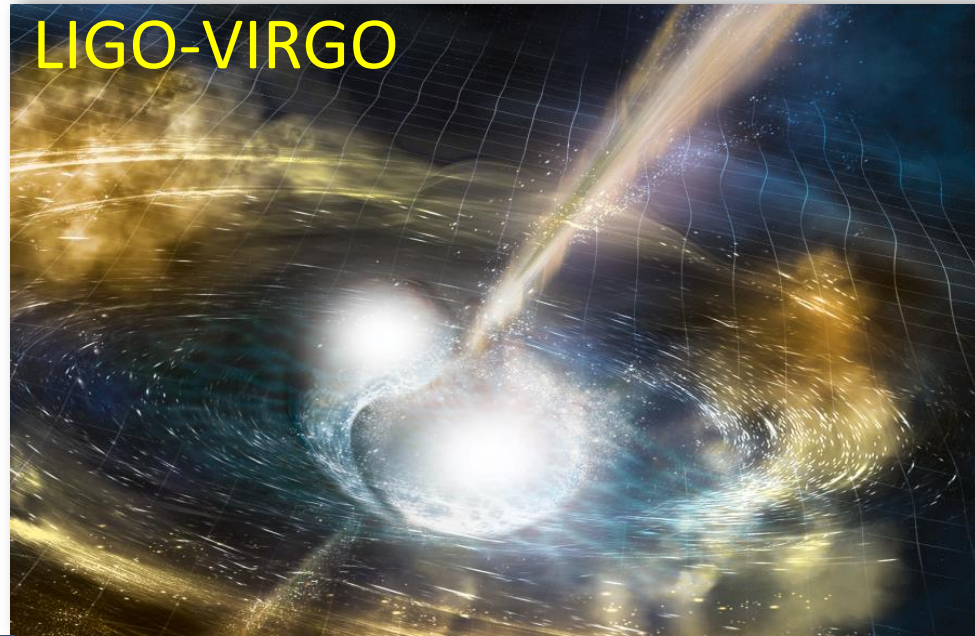
1. High-energy Universe: multi-messengers



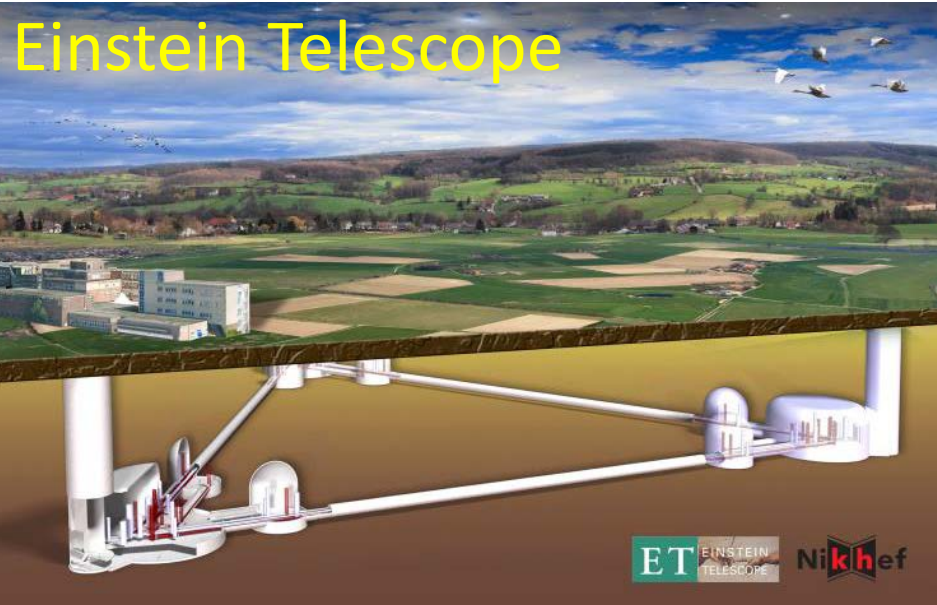
GW170817

start multi-messenger era

LIGO-VIRGO



Einstein Telescope



O3 run LIGO/VIRGO

Upgrades LIGO/VIRGO

ESFRI application ET

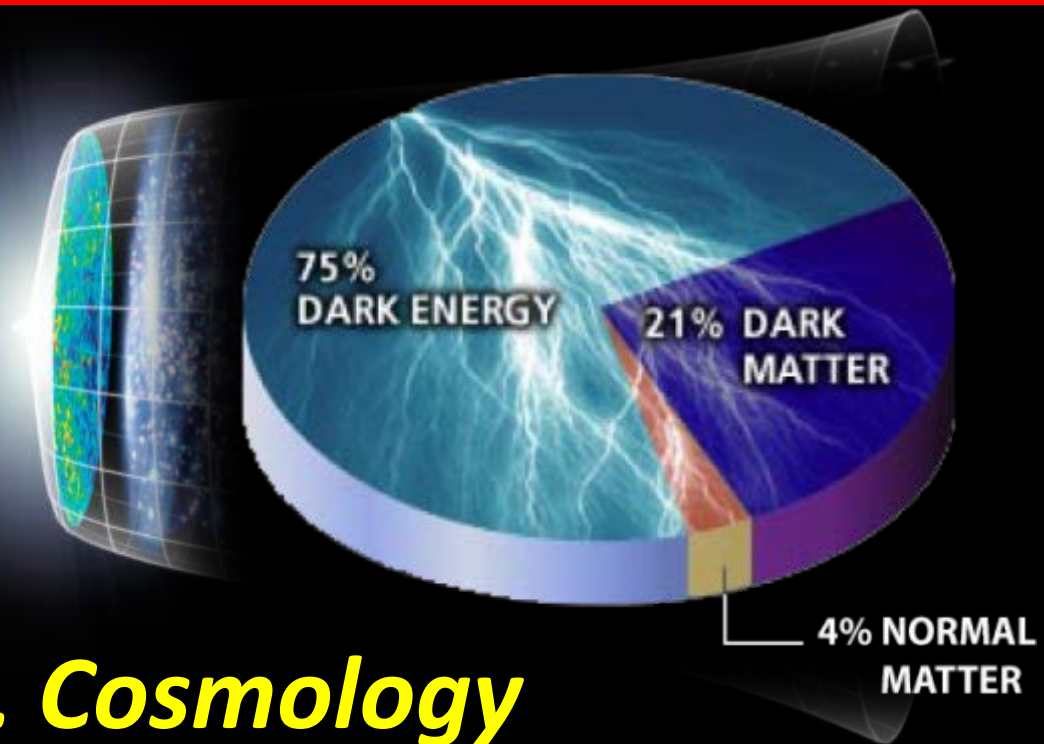
1. High-energy Universe: multi-messengers



2. Neutrino's



3. Cosmology





Organisational issues

- **Computing and data policies**
- European Coordination
- Global collaboration/coordination
- **Particle physics & Astronomy**
- Inter-disciplinary opportunities

Societal issues

- Gender balance
- Education & Outreach
- Industry

Recommendation 12: Computing and data policies

APPEC requests all relevant experiments to have their computing requirements scrutinised. APPEC will engage with the particle physics and astronomy communities to secure for the future a balance between available European computing resources and needs. Furthermore, APPEC encourages the use of data format standards to facilitate data access between experiments. APPEC supports the transition to Open Access publication strategies and encourages the making of data publicly available (as 'open data') to foster 'citizen science', for example.



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Job de Kleuver (FOM/APPEC), ASTERICS Kick-off meeting, 26 May 2015



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Thank you!

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