

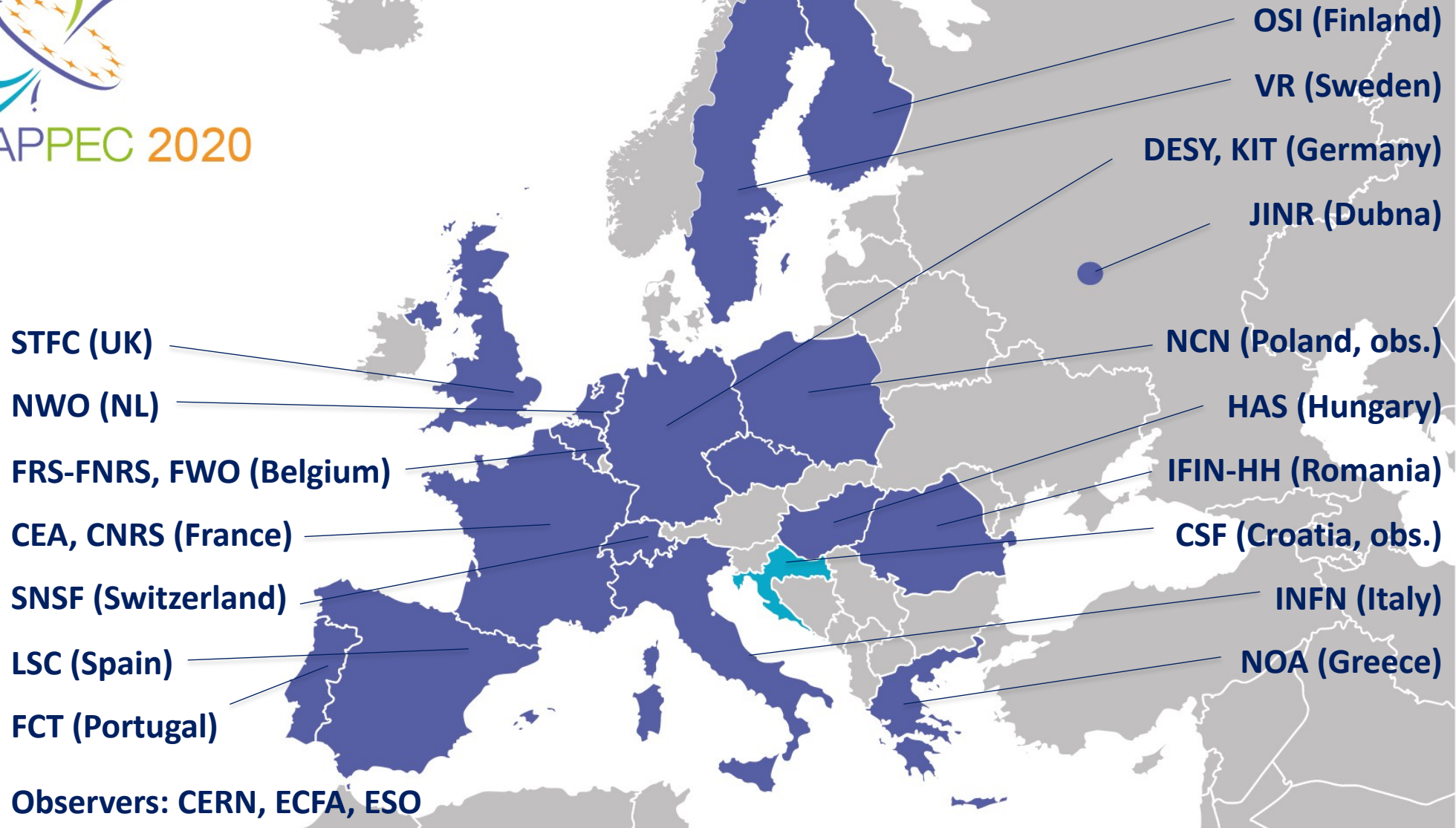


Astroparticle Physics for Europe

Christian Stegmann

Astroparticle Physics in Germany

Should be Bad Honnef but is Zoom, 3.12.2020



<https://www.appec.org>



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European Astroparticle Physics Strategy 2017-2026

(Credit: Christian Reisswig, Luciano Rezzolla, Max-Planck-Institut für Gravitationsphysik (Albert-Einstein-Institut/AEI)/ Michael Koppitz, Max-Planck-Institut für Gravitationsphysik (Albert-Einstein-Institut/AEI)/Zuse-Institut Berlin) © AEI/ITP/ZIB)

The organisational structure of APPEC consists of the following three bodies:

- The **General Assembly (GA)**, which is the supervisory body.
- The **Joint Secretariat (JS)**, the executive body chaired by the General Secretary.
- The **Scientific Advisory Committee (SAC)**, the advisory body.

The **General Assembly** is the strategic, decision-making, and supervisory body of APPEC. It is responsible for the general policy and the procedures of APPEC.

- Chair: Teresa Montaruli, Vice-Chair: CS,
General Secretary: Job de Kleuver

– Representatives from Germany

- Uli Katz (KAT)
- Andreas Haungs (KIT, KAT)

– Election new Chair and General Secretary at the next GA meeting

The Scientific Advisory Committee

- examines and reports on issues of strategic scientific importance. It can also propose programmes or projects for adoption as activities of APPEC.
 - Chair and Vice-Chair until summer 2020: Laura Baudis and Jocelyn Monroe
 - New: Chair: Sijbrand de Jong, Vice chair: Sylvia Pascoli
- From Germany:
 - Karsten Danzmann (GW), Manfred Lindner (Theory), Christian Weinheimer (Neutrino mass)

- Double Beta Decay
- Dark Matter direct detection
- APPEC Town Meeting
- EuCAPT (European Center for Astroparticle Physics Theory)
- JENAA (Joint ECFA-NuPECC-APPEC Activities)
- APPEC and EPPSU (European Particle Physics Strategy Update)

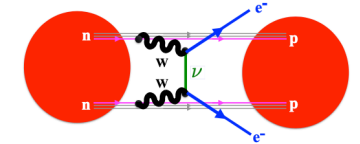


Figure 1: Schematic view of neutrinoless double beta decay.

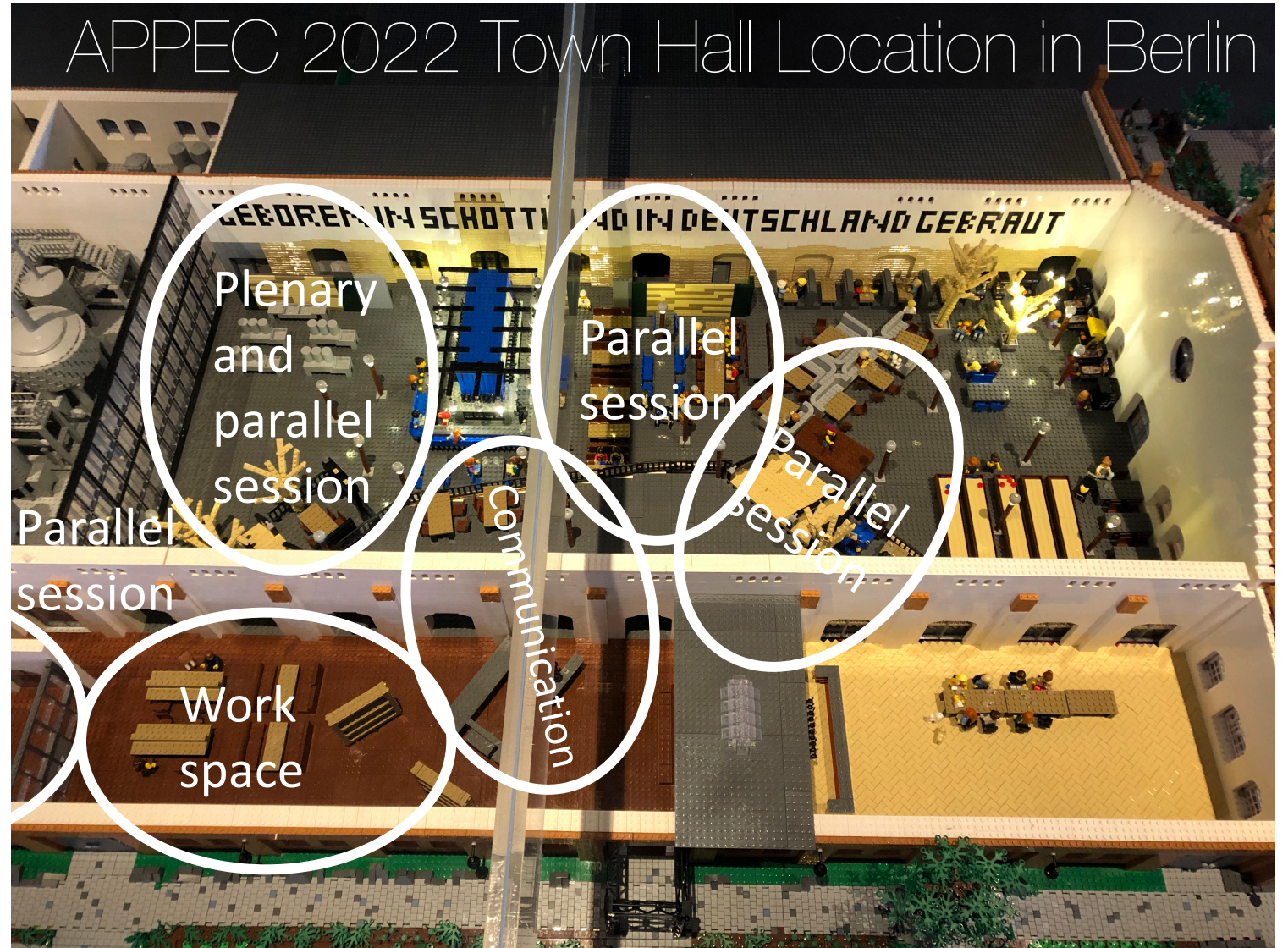
arXiv:1910.04688v2 [hep-ex] 10 Feb 2020

- Double Beta Decay
 - Double Beta Decay APPEC Sub-Committee gives advise to APPEC on the European (and international) programme in double beta decay physics. It should provide an assessment of the current and future scientific opportunities in double beta decay over the next 10 year period. ✓
 - Close coordination of APPEC GA chair with DOE nuclear physics
- Dark Matter direct search
 - Work ongoing, workshop end of January 2021 (date tbd)

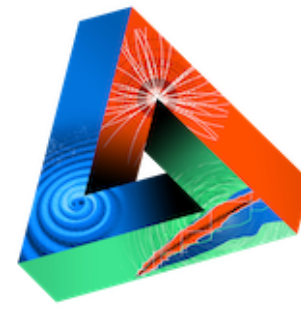
- APPEC Town Meeting (Midterm review of the strategy)
 - Goals
 - Overview of implementation status
 - Identify developments and new topics
 - Update addendum to the roadmap
 - Timeline
 - Provide information to the communities early next year
 - Discussion at the Town Meeting, postponed to **spring 2022** (to be decided by GA)



3/12/2020

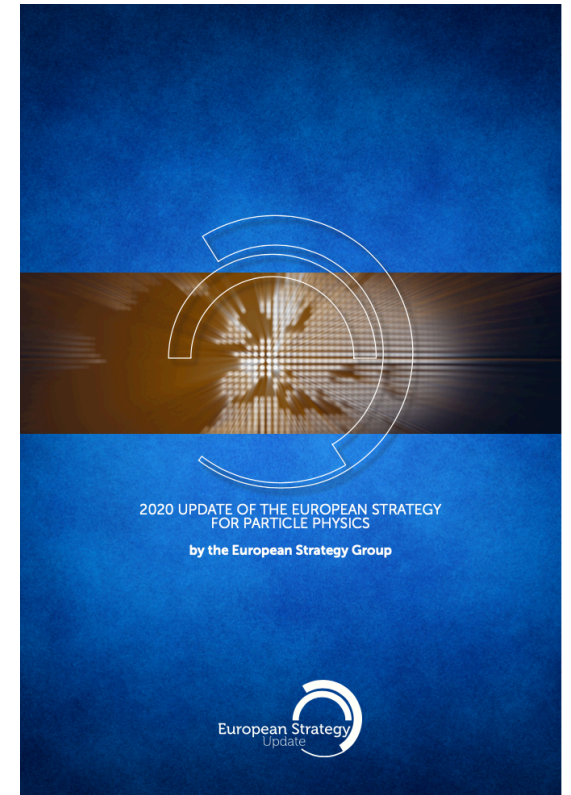


- EuCAPT (European Center for Astroparticle Physics Theory)
 - Chair: G. Bertone
 - census (660 scientist answered, from 31 European and 5 non-European countries),
 - a number of workshops and virtual colloquia.
 - a calendar listing all open (virtual) events is in preparation.
 - First annual symposium postponed



- Cooperation of nuclear, particle and astroparticle physics communities, represented by the three committees/ consortia NuPECC, ECFA and APPEC
 - Joint Seminars
 - Expression of Interest
 - Diversity Charter
 - Recognition Working Group
- **List of submitted EoI:**
 - Dark Matter - iDMEu
 - Gravitational Waves for fundamental physics
 - Machine-Learning Optimized Design of Experiments – MODE
 - Nuclear Physics at the LHC
 - Storage Rings for the Search of Charged-Particle Electric Dipole Moments (EDM)

- European Particle Physics Strategy Update 2020
 - Astroparticle physics, coordinated by APPEC in Europe, also addresses questions about the fundamental physics of particles and their interactions. The ground-breaking discovery of gravitational waves has occurred since the last Strategy update, and this has contributed to burgeoning multi-messenger observations of the universe. *Synergies between particle and astroparticle physics should be strengthened through scientific exchanges and technological cooperation in areas of common interest and mutual benefit.*
- APPEC is in contact with CERN



- Next APPEC GA Meeting: 9.12.2020
 - Next steps Neutrinoless Double Beta Decay developments
 - Towards a more sustainable APPEC
 - Scientific Advisory Committee (SAC)
 - Planning and preparations APPEC Town Meeting
 - Election new Chair and General Secretary
 - Report General Secretary
 - Joint ECFA-NuPECC-APPEC activities