

Astroparticle Physics International Forum APIF

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representing SERI

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An information channel for SERI about global developments in ApP

- A world-wide international body to exchange information and to advise ministries and funding agencies:
- priorities, programs and constraints of each country, including strategic goals, budgets and project status.
- Includes six domains: dark matter, dark energy, high-energy cosmic messengers, gravitational waves, proton decay, and the properties of neutrinos, i.e. particle physics without accelerators.

APIF Membership

- Members of APIF are representatives of ministries or funding agencies, not of scientific institutions.
- Global participation includes major European countries, Switzerland, US agencies, South American and Asian countries.

News from May Beijing Meeting

Plans of the **Chinese Academy of Sciences**:

- space experiments (POLAR, DAMPE, SVOM, the HERD proposal...),
- the LHASSO ground experiment, complementary to CTA at higher energies,
- construction of new detectors in the Daya Bay reactor neutrino project,
- operation and development of the new underground JinPing laboratory in Sichuan province , which is the deepest in the world.

Plans of the **Indian government**:

- participations of India to CTA and to the gravitational waves detector LIGO-India are presently in discussion.
- construction of an underground laboratory for a 50 kton magnetized iron atmospheric neutrino detector and other experiments is in progress. However this project is presently stopped due to oppositions in the area!

APIF was informed by the **US DOE and NSF** on how the P5 report would be implemented:

- Dark Energy: DESI, LSST...
- Dark Matter: Invest in this program
- Support CMB experiments as part of the core particle physics program
- Cosmic Rays and Gamma Rays: not continuing support of research, planning, R&D efforts on CTA.
- *NSF should contribute to areas of common interest with DOE when the NSF investment: significantly enhances scientific value...*

- Plans of Italy, France, Germany, UK, Netherlands...
- Open Access to publications (extension of SCOAP3 ?) and data
- Document applications of ApP to society.

Future APIF Role and Structure

- APIF has held nine meetings under the auspices of OECD GSF.
- The members find the structure very useful; they regret that OECD GSF cannot support it after 2016 and have decided to find a new operating structure after that date.

Draft Proposal by CH

- Inspired by the Terms of Reference of FALC (The Funding Agencies for Large Colliders):
an informal venue for funding agencies in the world to share information on future particle collider accelerators projects and research in particle physics therein.
- to continue the activities of APIF as
an informal venue for funding agencies in the world to share the information on future astroparticle physics projects and research in astroparticle physics therein.

Relationship to CERN?

- If APIF wanted to be related to CERN, a political decision in accordance with article II of the Convention could be taken

Additional slides

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- Italy: in cooperation with China, the underground neutrino experiment JUNO and the DAMPE mission will be supported, while participation to LHASSO and to the Moon mission are in discussion; regional funds are being sought for underwater detectors; activities are being pursued in the Gran Sasso laboratory with the hope of it becoming a European laboratory; CTA is funded by two agencies.
- Germany: the issue of operating costs for CTA is solved.
- F-IN2P3: in the domains of dark energy and cosmology, collaboration agreements have been signed for LSST and EUCLID; the start of CTA funding will be in 2017; ANTARES is moving toward a KM3net phase; F will participate to JUNO and to WA105 in view of the DUNE experiment in the USA; it will increase its participation to sterile neutrino searches.
- F-CEA: aims at participating in particular to EUCLID, the preconstruction phase of CTA, EDELWEISS III, while the SVOM mission with China is fully funded.
- UK: a spending review is foreseen by next October; the outcome of support for DUNE and HyperK is not clear.
- Netherlands: will pursue KM3net, should join DUNE
- Korea: a RENO far detector has been proposed to the government; the Institutes of Basic Sciences established in 2012, including one for underground physics, experience difficulties in recruiting staff.
- Japan: supports CTA, TA, and possibly Klypve-EUSO; the HYPERK TDR should be ready by this October.

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Cf article II:

The Organization shall, in the collaboration referred to in paragraph 1 above, confine its activities to the following:

a. the construction and operation of one or more international laboratories (hereinafter referred to as "the Laboratories ") for research on high-energy particles, including work in the field of cosmic rays; ...

b. the organization and sponsoring of international co-operation in nuclear research, including co-operation outside the Laboratories; this co-operation may include in particular:

work in the field of theoretical nuclear physics;

the promotion of contacts between, and the interchange of, scientists, the dissemination of information, and the provision of advanced training for research workers;

collaborating with and advising other research institutions;

work in the field of cosmic rays.