



Report on ApPEC

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January 2011 CHIPP Board Meeting



Activities in Progress

An **ApPEC-CERN work plan** has been approved by the European Strategy Sessions of CERN Council and by the Steering Committee of ApPEC :

- ApPEC's role in Strategy Update and CERN's role in ApPEC Roadmap update
- Common CERN-ApPEC Theory Program
- Common CERN-ApPEC outreach activities
- Common K&T Transfer activities
- CERN participation in possible future projects in the area of APP
- More formal links between CERN and ApPEC
 - **Next steps: CERN Council in March, identification of experts**

Activities in Progress

Relationships with ESO and ESA will now be considered

Future of ApP coordination:

- The new ApPEC strategic and implementation objectives have been approved
- The form of the new legal structure is still being discussed:

ApPEC Strategic objectives

- Provide a discussion forum for the coordination of European ApP;
- Develop and update long term strategies (e.g. Roadmap for European ApP);
- Participate in the European scientific strategy with organizations such as the European Strategy Session of CERN Council and ESFRI;
- Develop closer relationships with organizations such as CERN, ESA and ESO;
- Express collective views on ApP in international fora.

ApPEC Implementation objectives

- Facilitate and enhance the coordination between existing or developing national activities;
- Develop a common action plan for large ApP infrastructures of based on the Roadmap;
- Facilitate the convergence of future large scale projects/facilities;
- **Provide organizational advice for the implementation of future large scale projects/facilities, for instance initiate and/or accompany the creation of resource review boards for international collaborative projects where the national funding agencies are involved;**
- Initiate and guide European funded activities (ERA-NET, IA, Prep-Phase);
- Launch common actions including common calls funded by a virtual common pot.

Activities in Progress

- ApPEC will propose to interested Ministries or funding agencies to sign a **Letter of Intent**:

to support the creation of a coordination body: Astroparticle Physics European Coordination (ApPEC) to implement the strategic and implementation objectives

The new ApPEC shall include typically a General Assembly of the stakeholders (high-level agency officials), an Office to follow-up the day-to-day work, and a Scientific Advisory Committee.

Current Actions through ASPERA

- Census of ApP 2009 activities and resources (should be compared to 2006 census)
- Update of the Strategic roadmap through the Scientific Advisory Committee (SAC)
- Second Common call for R&D activities in neutrino mass and HE cosmic rays

Current Actions through ASPERA

Publication of Monthly Newsletter



Canfranc Underground Laboratory is ready to go

In the cosmic silence under Spanish mountains the new Canfranc Underground Laboratory is opening. Firstly dedicated to dark matter research, it is also open to other fields such as geology, biology and environmental sciences.



The underground facilities of the Laboratorio Subterráneo de Canfranc (LSC) have been completed and delivered by the University of Saragossa on 30 June 2010. Support services are hosted in a surface building, whose construction will be completed by end 2010.

LSC is dedicated to basic research in a number of fields, which can profit from its unique location deep underground under the Spanish Pyrenees, the site provides 2500 metre water equivalent of shielding from cosmic rays and offers a low background environment for the next generation of experiments exploring the frontiers of particle and astroparticle physics. The main scientific goal is the search for naturally occurring extremely

rare phenomena. Other scientific disciplines including geology, biology, environmental sciences, etc. can also profit from the unique location of the Laboratory. LSC is run by a consortium between the Spanish "Ministerio de Ciencia e Innovación", the Government of Aragon and the University of Saragossa.

Under 850 m of rocks

The history of underground research at Canfranc dates back to the middle of the 1980s, when A. Morales and his nuclear and high-energy physics group from the Universidad de Saragossa started to develop >>

This month:

- > Canfranc Underground Laboratory is ready... 1-2
- > ISAPP: creating a real astroparticle community 3-4
- > H.E.S.S II is taking shape 5-6
- > Will the sun reveal its dark side? 7-8

Next meetings:

- > Synergies between Environmental Sciences & Astroparticle Physics 1-2 December 2010 - Paris / France
- > Outreach meeting 9-10 December 2010 - Paris / France
- > Computing workshop Spring 2011 - Barcelona



ASPERA Workshops



**COMPUTING FOR
ASTROPARTICLE PHYSICS**
Aspera workshop in CC-IN2P3 Lyon 7-8 October 2010

Astroparticle physics studies high energy phenomena using new cosmic messengers (high energy photons, cosmic rays, neutrinos and gravitational waves), the nature of dark matter and energy, the form of matter and interactions at the highest energies (proton lifetime, neutrino properties). The large infrastructures proposed in the ASPERA Roadmap will face challenging problems of data collection, data storage and data mining.


In the Lyon workshop these issues will be addressed and will be confronted with data storage and analysis models developed in particle physics and astrophysics.

Issues of intelligent distributed data gathering and heterogeneous data fusion will also be addressed, as well as the availability of environmental data collected by these observatories to geosciences and the education network (outreach).

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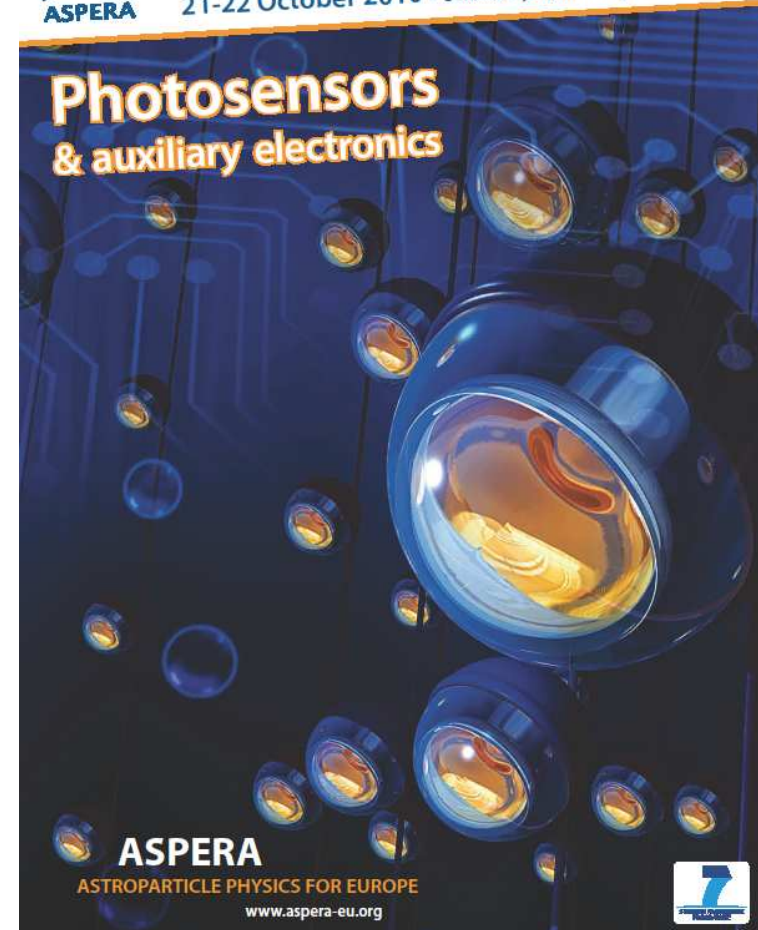

MB January 26, 2011



ASPERA Technology Forum
21-22 October 2010 - Schloss Nymphenburg - Munich

**Photosensors
& auxiliary electronics**

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ASPERA Workshops



From the Geosphere to the Cosmos:

Workshop:

The Synergies Between Environmental
Sciences and Astroparticle Physics

Date: 1 – 2 December 2010

Location: Palais de la Découverte, Paris

Atmospheric physics at Auger

Cosmic rays and climatology

Correlation of ultra-high energy
cosmic rays with lightning

Marine sciences at Antares

Geoneutrino physics and nuclear
activities monitoring

Bioacoustics and geophysics at NEMO

Muon radiography applied to
volcanology

Cosmic ray-produced radionuclides in
Earth sciences

ARGO-YBJ: a straightforward
approach for space weather
forecasting

Environmental sciences in glacial ice

B.Keilhauer (Germany,
KIT)

U.Baltensperger
(Switzerland, PSI)

P. Krehbiel (USA, New
Mexico Tech)

P.Coyle (France, CNRS-
CPPM)

D.Lhuillier (France, CEA -
Saclay)

G.Riccobene (Italy, LNS-
INFN Catania)

J.Marteau (France, IPN-
Lyon)

T. Dunai (Germany, Univ.
of Cologne)

Z.Cao (China, IHEP)

B. Price (USA, UC
Berkeley)

ASPERA Workshops



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Gravitational wave antennas and
seismology

P.Lognonné (France,
IPG Paris)

ApP and associated sciences at
LNGS

L.Votano (Italy, LNGS)

ApP and associated sciences at LSM

F.Piquemal (France,
LSM)

Laguna, a design study for a Large
Apparatus for the search for Grand
Unification and Neutrino
Astronomy

F. von Feilitzsch
(Germany, TUM)

CTA, associated sciences and energy
considerations

S.Nolan (UK, Univ. of
Durham)

AGILE: terrestrial gamma-ray
flashes as powerful particle
accelerators

M.Tavani (Italy, INAF
and Univ. of Rome)

BAIKAL: an underwater laboratory
for ApP and environmental studies -

Prof. N.Budnev (Russia,
Irkutsk State Univ.)



From the Geosphere to the Cosmos:

Workshop:


The Synergies Between Environmental
Sciences and Astroparticle Physics

Conclusions on this workshop

- The scientific activities at the interface between ApP and environmental sciences have been shown to be rich .
- Promoting these activities and inviting scientists to propose new projects is therefore desirable.
- ASPERA will edit a paper describing 1) the main scientific achievements, 2) the facilities and the infrastructures where these activities can be conducted.

A workshop to promote interdisciplinary science at the Auger observatory.

Interdisciplinary Science @ the Auger Observatory: from Cosmic Rays to the Environment



A workshop to promote interdisciplinary science at the Pierre Auger Observatory in Western Argentina

18-19th April 2011

Centre for Mathematical Sciences
University of Cambridge

To register and for more information go to
www.ncas.ac.uk/isATao

IS@AO

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Conclusion

ApPEC to play a larger role at level of funding agencies, for the scientific community, in the domain of “astroparticle physics”

Input from CHIPP members is necessary

Additional slides

Future large projects which may benefit from a structured financial decision process

- Underground giant neutrino detector
- Ton-scale neutrinoless double beta decay experiment
- Multi-ton dark matter search facility using Ar/Xe
- CTA
- JEM-EUSO