

# **Report on the ASPERA Swiss National Day**

**Geneva, December 3, 2007**

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## **1. Introduction**

On December 3, 2007 took place in Geneva the 7th National Day of the ASPERA ERA-Net, the European network for the development of astroparticle physics (APP). This event was organised in the beautiful building of the Globe at CERN by the Swiss National Research Foundation under the responsibility of Prof. Maurice Bourquin, representative of Switzerland in ASPERA ERA-Net. About 45 participants, from the Swiss APP community, from Swiss and international agencies, and from international scientific organisations, were present at this event.

The goals of these national days are 1) to present to the other members of the network the particularities of the funding systems of each country and 2) to identify the barriers to the development of APP in the host country and in Europe. It is expected that propositions for new collaborative funding mechanisms of APP in Europe should emerge from these meetings. The organisers took particular attention to make this event a forum where members of the Swiss APP community could directly share their views on these issues with representatives of the funding agencies.

## **2. The structure of research in Switzerland.**

### **Status**

The level of R&D in Switzerland with respect to GDP was shown to be 2.9 %, which makes it the 4<sup>th</sup> highest in the world, with a large part (around 2.2 %) coming from the private sector. Considering the growth of the research budget already voted by the Swiss parliament, Switzerland will soon reach the so-called Lisbon objectives - 3% of the GDP and at least two thirds of the total R&D investments coming from the private sector.

The public support to R&D comes from the federal government and the cantons (see figure). No overall picture of support by the cantons was presented, although it was mentioned that the 10 cantonal universities are financed predominantly by the cantons.

The federal government supports the research according to guidelines, goals and funding of the Education, Research and Innovation system (ERI). The budgets are proposed by the State Secretariat for Education and Research (SER) and to a much lesser extend by the federal department of economy. For the years 2008-2011, it foresees a budget of CHF 20 billions, to be reviewed each year by the parliament, corresponding to an annual growth rate of 6%. This budget includes the Federal Institute of Technology sector (FIT). The basic funding of the universities comes from the cantonal parliaments, with some contributions from the federal government (14% in 2005 for the University of Geneva).

The Swiss National Science Foundation (SNF) receives its budget from SER. It has allocated 545 MCHF in 2007, mostly for investigator-driven research, of which only 6% is for equipment. The SNF treats the FIT, the universities (and the HES (Hautes Ecoles Spécialisées), less concerned with research) on an equal footing.

Membership fees for research organizations under existing international treaties (e.g. CERN) are provided separately. Contribution to FP7 is also a separate budget. The participation of Swiss scientists to the EU Framework Programs is proceeding without obstacles from the time when bilateral agreements with the EU have been implemented. The Swiss participation to large infrastructures (LHC, XFEL, ESRF, etc.) is funded by means of specific credit lines (called International Collaborations) proposed by SER and included in the ERI system. Proposals for new infrastructures must proceed through SER.

## **Findings**

How are decisions taken to support new scientific infrastructures in Switzerland or in Europe? They are taken at the federal level through the chain SER, Federal Council, federal parliament. The decision process inside SER is therefore complex. No reserve for additional infrastructures is foreseen during the 2008-2011 period.

One notices a large inequality between the FIT and the university sector: the former can readily fund large infrastructures by internal reshuffling of resources (c.f. Swiss Light Source), while the latter does not have this possibility.

Have university researchers a voice in the decisions concerning infrastructures supported by ERI?

### **3. The APP activities in Switzerland.**

#### **Status**

APP activities in Switzerland form one of the three pillars of the CHIPP (Swiss Institute of Particle Physics) roadmap. The funds for APP projects allocated by the SNF are increasing since about 10 years, with respect to particle and nuclear physics, as well as physics in general. This increase is due to the increase of requests presented and approved, and not as a top down approach. It has been recognized that Swiss physicists participate in a number of APP projects, with high potential for new discoveries. Valuable expertise has been developed in the domains of space and telescope observatories. There are plans to participate in new international projects. Special funding mechanism exists for ESA-related projects, but need to be created for non-EAS and ground-based APP projects.

It has been acknowledged that impressive work is being carried out in the related fields of astrophysics, cosmology and nuclear astrophysics.

#### **Findings**

The SNF is looking forward to taking note of the ASPERA phase II roadmap.

## 4. Role of CERN in APP

### Status

Dr Aymar, General Director of CERN, gave his views on the place APP should occupy within CERN. It was recalled that the European Strategy for Particle Physics prepared by the CERN Council Strategy Group focused on accelerator physics activities but also highlighted astroparticle physics. The status of CERN “Recognised Experiments”, which 16 APP collaborations have obtained has then be described and was recognised of high importance by the researchers present in the audience. A visit to the AMS assembly clean room at CERN illustrated how APP experiments could benefit from this type of status. Closer links are called for, without full integration of the projects into the Organization.

### Findings

The CERN DG responded that he is expecting further discussions with ASPERA and ApPEC.

