Coordination Action
ASPERA

Coordinating efforts in astroparticle physics

"The greatest achievement expected from ASPERA would be the timely and coordinated funding of the 6 to 7 large astroparticle infrastructures needed for the development of the field."

The level of European funding for Astroparticle Physics compares well to that of the US, for instance, but this will be the first time that this funding will be concentrated by the participating European agencies on commonly agreed targets. An important milestone on this road will be the elaboration of a European roadmap. Two other milestones will be ASPERA's ability to launch common R&D calls and the linking of existing observatories and underground labs.

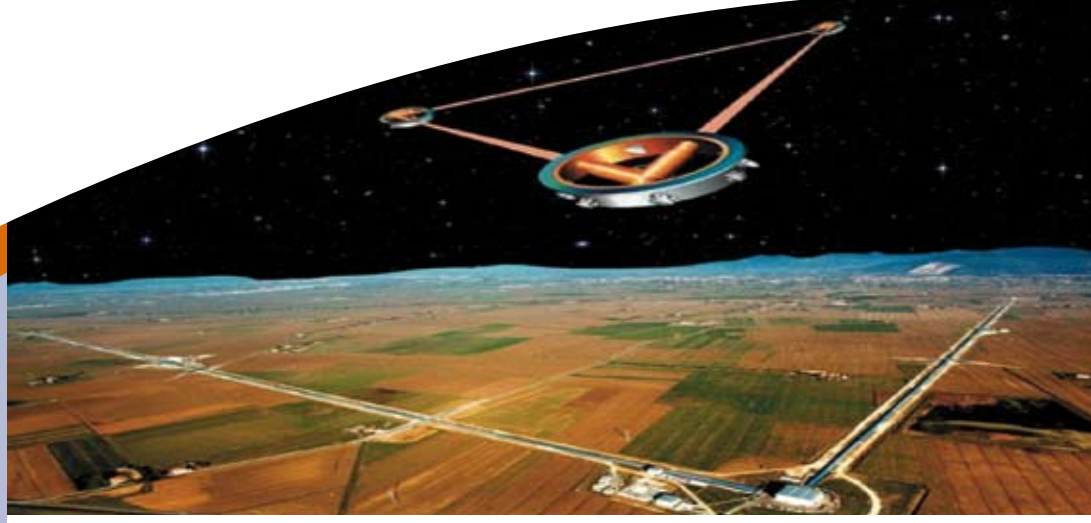
Networking astroparticles

Astroparticle Physics is a new field of research, emerging from the convergence of physics at the smallest and the largest scales of the universe. The rapid development of this interdisciplinary field at the intersection of particle physics, astrophysics and cosmology, has led to the design of new types of infrastructure. Using underground laboratories or specially designed telescopes, antennas and satellite experiments, astroparticle physicists employ new detection methods to observe a wide range of cosmic particles; these include neutrinos, gamma-rays, cosmic rays at the highest energies, gravitational waves, and the (as yet hypothetical) dark matter particles. With about 2000 scientists in some 50 laboratories, Europe is already a leading player in the field. Aimed at providing the vehicle to implement a roadmap and common action plan, the ASPERA project gathers together the European agencies responsible for funding Astroparticle Physics. They will unite their efforts in fostering a coherent Europe-wide research base.

Putting science into star gazing

People have been gazing at the stars for as long as they have been shining in the sky. However, our astronomical knowledge has increased tremendously through scientific research. The exciting discoveries of the 20th century gave birth to the astroparticle physics field, bringing to light the common ground between particle physics, astrophysics and cosmology. Pioneering experiments, with costs ranging from EUR 10 million to EUR 100 million per experiment, have made significant scientific contributions in many key areas. In the beginning, these comprised mainly research activities of small teams funded nationally. However, rapid developments in the field require the cooperation of several scientific teams from different countries, which will form and share large-scale infrastructures, budgets and manpower. ASPERA is an ERA-NET aiming at the consolidation of European research expertise, to achieve transnational cooperation. It has come about through ApPEC, an interest grouping of national funding agencies, which was founded in 2001 when 6 European scientific agencies took the initiative to coordinate and encourage astroparticle physics in Europe. The project consortium currently consists of 17 national funding agencies in Europe, including Centre Européen de Recherche Nucléaire (CERN) as a full participant. ASPERA will work closely at associate partner level with the European Space Agency (ESA), exploiting the complementarities and extensions of astroparticle physics programmes on the ground with space. Furthermore, the partners will interact with the European Strategy Forum on Research Infrastructures (ESFRI) committee, the European Southern Observatory (ESO) and the Astrophysics ERA-NET ASTRONET, an initiative for the coordination of national actions

Coordination Action
ASPERA



"The enthusiasm with which the scientific community and the funding agencies embraced the process makes me confident of the outcome."

Full title:
Implementation of Astroparticle Physics European Coordination

Research field:

Coordinator:
France: Centre National de la Recherche Scientifique (CNRS)

Partners:
- Germany: Bundesministerium für Bildung und Forschung (BMBF)
- France : Commissariat d'Energie Atomique (CEA)
- International : Centre Européen de Recherche Nucléaire (CERN)
- Portugal : Fundação para a Ciência e a Tecnologia (FCT)
- Belgium : Fonds National de Recherche Scientifique (FNRS)
- Netherlands : Stichting voor Fundamenteel Onderzoek der Materie (FOM)
- Belgium : Fonds voor Wetenschappelijk Onderzoek-Vlaanderen (FWO)
- Italy : Istituto Nationale di Fisica Nucleare (INFN)
- Spain : Ministerio de Education y Ciencia (MEC)
- Czech Republic : Ministry of Education Youth and Sports (MEYS)
- Switzerland : Swiss National Science Foundation (SNF)
- Greece : National Center for Scientific Research" Demokritos" (DEMOKRITOS)
- United Kingdom : Particle Physics and Astronomy Research Council (PPARC)
- Germany : Projektträger DESY (PT DESY)
- Spain : Fundacion Espanola de Ciencia y Tecnologia (FECYT)
- Sweden : Swedish Research Council (Vetenskapsradet) (VR)

Further information:
S. Katsanevas
CNRS
Fax: +33 1 44 96 53 40
E-mail: katsan@admin.in2p3.fr

Duration:
3 years

EC funding:
€2 500 000

covering the entire range of astronomical research. Consequently, duplication of effort and overlaps will be avoided, and at the same time synergies and optimal infrastructure equipment investments will be produced.

The first step in this exciting three-year journey will be the structured exchange of information between the consortium partners, national or supranational boards, and the research councils of all European countries. This process will highlight the research priorities and the similarities and discrepancies of administration, evaluation and funding in the national councils. Additionally, the legal and funding barriers hindering the transnational cooperation will be identified. Guided by this information, the common rules and tools for the administration and evaluation of transnational projects will be built, comprising a joint scientific roadmap for large astroparticle physics projects. This will be accomplished through the development of a database of evaluation experts, the development of common review procedures and the linking of existing infrastructures. Specific targeted workshops will provide the groundwork for identifying transnational research targets, and particularly for defining research topics for joint European programmes. The roadmap priority recommendations, combined with the joint strategic planning, will pass through the test of common or coordinated calls. Through the launch of a coordinated R&D programme, a common action plan for the funding of new infrastructures will be developed. To achieve this target, the respective alignment of part of the financial resources of the networking research councils will be realised. Moreover, the setting up of cooperation agreements on existing infrastructures, will yield a unified large scale substrate for the implementation of demanding research activities.

The interchange of information and the dissemination of results will be facilitated by the development of joint electronic communication tools and portals. Beyond acting as a single entry point, this common electronic infrastructure will enable effective joint processing of proposals and European programmes. It will enhance the unity of astroparticle scientists around the ERA-NET, strengthening the corporate identity of the consortium. An Internet-based information system will allow political decision makers, interested applicants and the public to have access to information about ASPERA, its programmes and its philosophy. It will also contain publications, calls for joint transnational proposals, lists of funded projects, benchmarking studies, links to researchers and national and supranational organizations. This regularly updated information will act as a mechanism to raise and maintain public awareness, enabling further mobilization of key players, and consequently network expansion too.

ASPERA provides a convergence point where scientists and agencies meet, in order to take Europe-wide decisions on future programmes and infrastructures on astroparticle physics research. As a coordinating action, it provides a framework which embraces the implementation of joint activities, focusing on mutuality and synergy. The attainment of its goals will pave the way for the implementation of sustainable cooperation agreements, working towards a European Research Area in astroparticle physics.

Project reference:
CA-036284 (ERAC) ASPERA

Directorate-General for Research:
Coordination of Research Activities
http://www.cordis.lu/coordination/home.html

© European Communities, 2007 - Reproduction is authorised provided the source is acknowledged.