

LIP International Advisory Committee
Meeting of 24th February 2011 in Lisbon

Present: E. R. de Arantes e Oliveira, C. W. E. van Eijk, C. W. Fabjan, P. G. Innocenti,
L. Rolandi, H. Schopper

The LIP International Advisory Committee met in Lisbon on 24th February 2011 to review the 2010 results and discuss the 2011 programme of work.

Prior to the meeting, Committee Members received a detailed report on the 2010 results as well as a description of the activities planned for 2011.

In a formal session Committee Members met with members of the LIP Directorate, G. Barreira (Lisbon), P. Fonte (Coimbra), R. Marques (Coimbra) and M. Pimenta (Lisbon). S. Andringa and H. Wolters, secretaries of the LIP Scientific Committee, also took part in the meeting. A report on the major activities of the Laboratory was given: by the LIP Management; results and perspectives were discussed.

In addition, Committee Members met with LIP staff in an informal session, discussing results and future activities.

The highlight of the meeting was the report of results obtained by ATLAS and CMS at the LHC. The hardware contributed by LIP to the two experiments worked perfectly, the presence of LIP staff was instrumental to the smooth data taking and LIP physicists were very active in producing physics results. The computing facilities made available by LIP to the collaborations performed very well, with an integrated CPU power well above what had been agreed initially.

The Committee congratulates LIP staff and management.

COMPASS at CERN took data with a muon beam in 2010 and is scheduled to continue in 2011. The long running periods represent a heavy load for the LIP team, responsible for the detector control system. The COMPASS LIP team has been a leader in the collaboration for data analyses, with many publications.

After completing the construction and installation of the RPC-based time-of-flight system for HADES at GSI in 2009, LIP Coimbra has been successful in commissioning the hardware. The group is getting active in the preparation for physics. The Committee remarks that manpower available from LIP for participating in physics studies with HADES is limited and encourages the Laboratory to address this issue. It would require strengthening the team in order to make the LIP presence in this area more visible.

LIP Lisbon has consolidated its position in data taking and analysis at the Pierre Auger Observatory. Moreover it has started a study on the possible use of large area RPCs in the upgrade of the experiment, a technology well in hand at LIP Coimbra.

LIP Coimbra has continued in the search for WIMPs with ZEPLIN-III, which is scheduled to finish data taking early in 2011. The participation of the team in another WIMP search, with the Large Underground Xenon (LUX) Collaboration has been formalized by an MOU. A relatively modest financial contribution is required for full membership in the Collaboration. The Committee encourages LIP to consider possible steps in this direction.

In the SNO experiment, the LIP team has continued its work on data analyses. For SNO+ the team has completed the tests of a PMT calibration method based on optical fibers, has finalized the design of the system and is preparing the procurement, manufacturing and installation in 2011.

A modified detector for AMS, with a permanent magnet and an enhanced spectrometer, is scheduled to be launched to the ISS in April 2011. After the uncertainties concerning the shuttle flights of last year, the operation of AMS opens a window of opportunity for many years of research. The Committee is concerned about manpower and funds required by an active participation in AMS in the long run.

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The Committee is aware that other proposals for experiments in particle astrophysics are put forward in Portugal, outside LIP, and is concerned about the overall effort being scattered in sub-critical units. A country-wide coordination seems desirable.

The GRID computing infrastructure has operated both in Lisbon and in Coimbra with excellent availability and performance, both for the LHC experiments and for other branches of science in Portugal. No hardware upgrade is foreseen in 2011. However, the LIP team is active in preparing a re-arrangement of the present GRID hierarchy and in understanding the impact of cloud computing.

In the field of detector for medical physics the project on Positron Emission Mammography (PEM) has undergone further clinical tests with success. It is now clear that the prototype will not be developed into a commercial product by the present collaboration: The search for an industrial partner to take over the project is ongoing.

PET technology by time-of-flight using resistive plate chambers has entered the prototype phase for a human whole body scanner at LIP Coimbra.

The LIP Coimbra group has continued research on new detector techniques. Within the RD51 Collaboration significant progress in the field of Micro-Pattern Gas Detectors has been made.

The project on Gaseous Scintillation Proportional Counters (GSPC) with PMT array readout has produced results on understanding the mechanism of primary and secondary scintillation.

A neutron time-of-flight detector (NeuLAND) for use at GSI is also proposed for 2011. In view of the limited resources the start of a new detector R&D project may be questionable.

The programme for training of young Portuguese graduates, primarily at CERN, has continued with a steady flow of trainees.

The programme for training Portuguese speaking high school teachers at CERN has confirmed in 2010 its success of the previous year

In general, outreach initiatives promoted by LIP are efficient, visible and well received.

In reviewing the programme the Committee once again acknowledges the dominant role of LIP in Particle Physics in Portugal, but is concerned by the absence of a national forum where a coherent discussion on research priorities and funding of projects could take place for the entire field. The Committee feels that such a forum should be established under the leadership of LIP: It will improve efficiency in the use of the available national resources and will reduce duplication of efforts.

The Committee regrets that, since the time of the review of LIP as an Associated Laboratory in 2009, a second five year contract has not been signed so far, with a negative impact particularly on recruitment.

The conclusions of the Committee on LIP performance are very positive with regards to the achievements in 2010 and to the proposed research programme for 2011.


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