13th May 2015

LIP International Advisory Committee

Meeting of 27th April 2015 in Lisbon

Present: C. W. Fabjan, P. G. Innocenti, L. Rolandi.

The LIP International Advisory Committee met in Lisbon on 27th April 2015 to review the 2014 results and to discuss the 2015 and long-range programme of work.

The meeting took place under exceptional circumstances, due to the untimely death of José Mariano Gago, President of LIP, on 17th April 2015. The Committee pays tribute to Gago for his lasting contributions to the establishment and development of LIP and to the advancement of science both in Portugal and in Europe.

Prior to the meeting, Committee Members had received a written report on the work carried out in 2014 and a description of the activities planned for 2015.

Committee Members heard detailed presentations on the progress of each project; the entire LIP staff attended these presentations. The Committee appreciated the high quality of the presentations and the careful preparation of the meeting.

The LIP groups of ATLAS and CMS continue making very significant contribution. Both teams have continued their involvement in analyses, covering some of the most interesting physics questions, and the preparation for the data-taking at 13 TeV, while fulfilling their responsibilities in the upgrade programme. The experimental LHC programme is complemented by a group addressing important phenomenological issues. The group has been very successful in creating a strong centre at Minho and attracting Ph.D. students.

The LIP group in COMPASS was deeply engaged in the preparation of the run which is just starting and is planning significant contributions to the analyses. The HADES groups maintained the well-functioning TOF-wall and is contributing to an interesting physics analyses.

LIP has a diversified programme in astroparticle and in non-accelerator particle physics. The AMS experiment on the ISS has produced novel results on particle ratios of as yet not understood origin. The LIP uses the RICH detector, for which it has responsibility, for studies of the isotopic composition of Cosmic rays. The Auger experiment has produced intriguing results on the very high energy cosmic rays with the LIP group exploring hadronic physics at the 100 TeV scale. An upgrade is under way to improve muon identification. The LUX experiment is running and improving the world's limits on the detection of dark matter candidates. The LIP group in LUX is a prime mover in the next Liquid Xenon dark matter detector LZ. The commissioning of the SNO+ detector has progressed: LIP has delivered the photomultiplier calibration system. Studies for a high pressure gaseous xenon detector for NEXT, a ^{136}Xe neutrinoless double beta decay experiment, have progressed; commissioning of phase 1 of the experiment is due to start this summer.

In the prevailing difficult financial situation LIP could maintain a healthy programme on detector research and development thanks principally to the grant Rad4Life obtained in 2013. It covers a broad spectrum of studies on gaseous detectors, neutron detectors, and investigations related to medical imaging. The development in the use of RPCs for a time of