

Minutes of the 64th Meeting of the PRC DESY November 8th and 9th 2007

PRC members present:

G. Anton (U Erlangen), J. Brau (Oregon), P. Buchholz (Siegen), R. Forty (CERN), U. Gensch (DESY), R. Heuer (DESY/U Hamburg), Y.K. Kim (Chicago), J. Kühn (Karlsruhe), T. Lohse (HU Berlin), R. Milner (MIT), N. Saito (Kyoto U), J. Timmermans (NIKHEF), S. Riemann (DESY, scientific secretary), F. Lehner (DESY, next scientific secretary)

G. Quast (Karlsruhe) attended the meeting via phone.

R. Brinkmann (DESY), W. Hollik (MPI Munich) and A. Wagner (DESY) could not attend the meeting.

Non PRC members attending closed session items:

Representatives from the Experiments:

POL2000 T. Behnke (DESY), N. Coppola (DESY), R. Fabri (NIKHEF), S. Schmitt (DESY)

H1: O. Behnke (Heidelberg), A. Campbell (DESY), C. Diaconu (Marseille/DESY),
G. Eckerlin (DESY), D. Pitzl (DESY), D. Ozerov (ITEP Moscow), C. Vallee
(Marseille)

ZEUS: H. Abramowicz (Tel Aviv U), E. Gallo (INFN Firenze), C. Glasman (U Madrid),
T. Haas (DESY), U. Schneekloth (DESY), M. Wing (UCL London)

HERMES: A. Fantoni (INFN Frascati), E. Kinney (U Colorado), N. Makins (U Illinois), J.
Stewart (DESY),

LHC: V. Gülzow (DESY), M. Medinnis (DESY), S. Wiesand (DESY), W. Zeuner
(DESY)

ALPS A. Lindner (DESY), N. Meyer (DESY), E. Knabbe (DESY), A. Ringwald (DESY)

IceCube E. Bernardini (DESY), R. Nahnauer, S. Schlenstedt, C. Spiering

ILC R&D:

FCAL: I. Bozovic-Jelisavcic (VINS Belgrade), M. Idzik (U Cracow), A. Levy (Tel Aviv
U), W. Lohmann (DESY), S. Schuwalow (DESY), L. Zawiejski (INP Cracow)

CALICE: J.C. Briant (LLR), F. Sefkow (DESY)

External Referees: J. Gayler (DESY), D. Pitzl (DESY)

The PRC reviewed the following documents:

Update Reports from existing R&D projects:

PRC R&D 02/01 Update 03(07): CALICE Report to the Calorimeter R&D Review Panel
Addendum prepared by the CALICE Collaboration for this PRC Meeting

PRC R&D 02/01 Update 05(07): Report to the ILC Detector R&D Panel. Instrumentation of
the Very Forward region.

PRC 01/07 Status 01(07): Status, Results and Future of the DESY Astroparticle Physics Group.

Agenda

Open session: November 8th 2007, Main Auditorium

HERA Resume	M. Bieler (DESY)
H1	D. Ozerov (ITEP Moscow)
ZEUS	C. Glasman (U Autonoma de Madrid)
HERMES	E. Kinney (U of Colorado)
ALPS	N. Meyer (DESY)
LHC Experiments	
ATLAS	M. Medinnis (DESY)
CSM	W. Zeuner (DESY)
DESY's contribution to the LHC Computing	V. Gülzow (DESY)
IceCube	E. Bernardini (DESY)
ILC Detector R&D:	
FCAL	M. Idzik (U Cracow)
CALICE	J.C. Brient (LLR)

Closed Sessions: May 10th and 11th, Seminar room 7a

- Item 1: Approval of the minutes and matters arising from last meeting
- Item 2: News from the Laboratory
- Item 3: ILC Detector R&D
 - 3. 1. Overview of DESY Activities
 - 3. 2. Review of the FCAL Collaboration
 - 3. 3. Review of the CALICE Collaboration
- Item 4: Review of HERA Experiments
 - 4. 1. HERA Machine
 - 4. 2. Review of Pol2000
 - 4. 3. Review of H1 and ZEUS
 - 4. 4. Review of HERMES
- Item 5: Review of LHC Experiments
 - 5. 1. Review of ATLAS
 - 5. 2. Review of CMS
 - 5. 3. Review of Computing
- Item 6: Review of Particle Astrophysics
- Item 7: Review of ALPS
- Item 8: Internal Target Experiment at DORIS
- Item 9: AOB

Item 1: Approval of the minutes and matters arising from the last meeting

The minutes of the 63rd DESY PRC meeting were accepted with minor changes. The PRC would like to thank the leaving members J. Brau and R. Forty for having served on the DESY PRC and would also like to thank T. Lohse, N. Saito, G. Quast and J. Timmermans for agreeing to continue their PRC membership for another two years. The PRC also thanked S. Riemann for being the scientific secretary for the past years and F. Lehner for accepting the appointment as secretary for the next 2 years.

Item 2: News from the Laboratory

R. Heuer reported the news from the Laboratory.

On June 30, 2007, the HERA machine was shut down. The 15 years data taking at HERA were finished with a 4 month period of running at reduced proton energies. The end of the successful era of unique measurements was celebrated with a HERA Fest at DESY. The data analysis will be continued over the next years.

End of May a Symposium and Colloquium in honor of Peter Zerwas, leading scientist at DESY, was held at DESY. Beginning of June more than 600 physicists met at the LCWS and ILC 2007 at DESY Hamburg and defined the roadmap for the ILC as well as for the detector R&D.

In May 2007 the Senate of the Helmholtz Association of German Research approved the DESY project proposal "Helmholtz Alliance - Physics at the Terascale", granting 25 million Euros for the next five years. In this Alliance, DESY and Karlsruhe, together with 17 universities and the MPI Munich, will jointly advance German particle physics and technological developments at particle accelerators like the LHC and the planned ILC. At DESY, an Analysis Center for LHC data will be established with the help of the Alliance funds. DESY will also offer its facilities to Alliance partners for tests within the framework of detector and accelerator development and offer new jobs. The official Kick-off meeting will be held in December at DESY.

A new Helmholtz research group will be established at DESY in which mainly young scientists from DESY and three participating Russian institutes will research on particle physics. The group will be involved in physics analyses of experiments at the HERA, LHC and ILC accelerators and detector design and construction for LHC and ILC.

On June 5, Federal Research Minister Schavan officially launched the European XFEL project. The underground construction is planned to take place in spring 2008.

After a successful upgrade, the FLASH facility reached its design beam energy and observed lasing with the design wavelength at the first time in October 2007.

In September, the laying of the cornerstone for the experimental hall of PETRA III was celebrated. The PETRA III installation will be finished in 2009.

After the positive midterm evaluation of the DESY programme on particle and astroparticle physics by the Helmholtz Senate the Lab will start to prepare the next five-year planning.

The PRC continued the discussion in the closed session.

The PRC congratulates the laboratory for a number of achievements reported by Rolf Heuer. These include the successful running for HERA and its three experiments, the smooth and efficient transition to the HERA low-energy running modes, the rapid progress on dismantling PETRA3 and HERA detectors, and the DESY groups' significant contributions to the ATLAS and CMS experiments and ILC detector R&D. The midterm evaluation of the Helmholtz Senate recommendations relevant to DESY's particle and astrophysics programs appears to be very positive and the laboratory expects the final endorsement of the evaluation by the Scientific Council in two weeks. DESY's next five-year planning for the period between January 2010 and December 2014 will be submitted by summer 2008 and its preparation will begin early next year. The next PRC meeting will be held earlier than usual in order to provide timely advice for this preparation.

Item 3: ILC Detector R&D

Item 3.1: Overview of DESY Activities

T. Behnke reported the DESY R&D activities for the ILC with respect to the international scene. The ILC Reference Design Report (RDR) signed by about 2000 people has been published and covers physics goals, accelerator and detector design. Next steps are the Engineering Design Report (EDR) and the optimization of the detector concept and conceptual engineering work yielding a letter of intent for an experiment at the ILC. DESY R&D activities are supported by own DESY funding, young investigator groups, EUDET, EUROTeV and the HGFAlliance.

The PRC continued the discussion in the closed session.

The PRC notes that DESY has been actively involved in ILC detector R&D and their activities include vertex detector, TPC developments, calorimeter developments, forward calorimetry, and polarization. DESY had primarily been involved in one of four detector concepts, LDC, that had evolved from the TESLA detector. Since the summer of 2007, LDC joined forces with the Asian detector concept GLD and created a new detector concept ILD. We commend DESY's active and leading role in ILC detector R&D. DESY activities on the ILC are funded from many sources and we congratulate DESY management for successfully securing 3rd party funding.

Item 3.2: Review of the FCAL Collaboration

W. Lohmann reported the status of the FCAL (Forward Calorimetry) project with focus on the resources. The FCAL programme is ambitious and requires additional manpower and budget for successful prototype developments and tests.

J. Gayler presented the referee report for J. Brau and himself. The FCAL group is now well connected to the ILD and SiD concepts. Although the resources are limited the collaboration has achieved excellent progress since the last PRC review. The project covers the high

precision luminosity measurement with LumiCal, precision, BeamCal for particle vetoing and GamCal which provides together with BeamCal a fast feedback for luminosity monitoring. The challenge is the radiation hardness of detector sensors and readout components, the radiation level is expected to be several MGy/year. Different sensor options are under consideration; a solution has not yet been found. For the next years a detailed simulation of LumiCal and luminosity measurement is scheduled, the performance studies for the BeamCal should be completed and the design simulations for GamCal should be finalized. Sensor development may influence further design and is a critical issue.

The PRC continued the discussion in the closed session.

The PRC acknowledges that FCAL is a challenging project, yet is very important for the whole ILC experiment. The PRC is impressed by the written report of their activities, where both physics requirements and the technical implications were clearly stated. The FCAL group is an active collaboration, and made progress in many areas. There is significant work left for the goal of prototypes in 2010. The PRC commends that the FCAL group brings together the community from a broad area. This effort is well appreciated by the World-Wide Study Group and indicates a strong leadership by the Zeuthen group. The PRC also commends that the FCAL group is well connected to the two prominent ILC detector concepts; ILD and SiD, and is working to develop LoIs by Oct. 1, 2008. The PRC notes that FCAL effort could be useful beyond the ILC detector, for example, for SLHC detectors. We recommend that the FCAL group continue to communicate with the machine group closely. The PRC recommends DESY to continue their support.

Item 3.3: Review of the CALICE Collaboration

F. Sefkow reported the status of CALICE and focused on the DESY effort and the analysis of test beam data. Since the last PRC review a successful and comprehensive program has been executed to test calorimeters of unprecedented granularity with beams. Several technologies for electromagnetic and hadronic calorimeters have been proven with test beams at CERN and DESY. The data are of high quality, and are currently analyzed and compared with simulations. Based on the results appropriate calorimeters for the ILC detector will be designed. CALICE asks for continued scientific, technical and computing support.

The CALICE Collaboration was reviewed by J. Brau and D. Pitzl. The main goal of CALICE is the study of basic questions for calorimeters in the particle flow paradigm with focus on the accuracy that can be reached, the granularity of the calorimeters and understanding of the hadronic shower structure. Prototypes are built to test several technologies in beam experiments. From 2008 technical prototypes for the ILD will be developed.

The discussion was continued in the closed session.

The PRC congratulates the CALICE collaboration on constituting an impressive world-wide effort towards ILC calorimetry. We commend the successful exercise in prototype

detector integration and their openness to test various technologies in a common framework. The PRC recommends that the DESY contribution to CALICE (analog HCAL, test beam infrastructure, coordination, analysis and simulation) be continued. The PRC supports increase in the effort towards the technical prototypes, and the test beam program at Fermilab in 2008 and 2009. The PRC recommends the hadron test beam results be fed back to shower simulation modellers. The PRC recognizes that the application of ILC detector technologies to other scientific fields could be beneficial. In order to achieve the final goals, the PRC recommends that DESY continue their support of these efforts. The PRC notes that setting clear goals and milestones in the next few years towards completing EDR successfully will be critical.

Item 4: Review of HERA Experiments

Item 4.1: HERA Machine

The PRC is greatly impressed by the excellent performance of HERA in the remarkable 460 GeV low-energy run and the rapid transition to a third energy (560 GeV) run in June followed by a 15 hour rapid start-up of HERA operations. We note that HERA delivered a total luminosity of 16 pb^{-1} at 460 GeV and 8 pb^{-1} at 560 GeV, and that beam polarization of $\sim 50\%$ was quickly achieved with low energy proton beams. The HERA team's dedication should be commended. On June 30, 2007, the HERA machine was shut down, after having delivered 0.9 fb^{-1} of e^+p collisions. It has been a remarkable 15-year journey of continuous improvement. This required constant effort and a wonderful collaboration developed with growing mutual trust and understanding between the laboratory management, the machine team and the experiments. We applaud the entire laboratory and all the collaborations for this effort.

Item 4.2: Review of POL2000

T. Behnke reported the status of the POL2000 project. The operation of TPOL, LPOL and the Cavity LPOL should provide a central polarization analysis for all HERA experiments. All polarimeters were successfully operated and an excellent overall efficiency was reached ($>99\%$ combining TPOL and LPOL). The data taking finished with the end of HERA running. In 2007 the polarization was about 40%; the current combined systematic uncertainty is expected to be improved with the understanding of the scale calibration of LPOL and TPOL as well as the error on the interaction point of electron and laser beam at TPOL. Shortly before the HERA shutdown also the rise of polarization from zero has been recorded to perform rise time analysis and calibration of the polarization at HERA. The Cavity LPOL system has been successfully commissioned in 2007 and significant sets of data were taken; the statistical precision is excellent. The results of LPOL and Cavity LPOL appear consistent. A real problem is the manpower.

The referee report was presented by R. Milner for P. Buchholz and himself. The uncertainty in beam polarization can be decreased significantly and a major effort involving all available manpower is necessary to achieve this goal within the next six months.

The PRC continued the discussion in the closed session.

The PRC is gratified to see that a quality set of TPOL, LPOL and cavity POL data was acquired in the final weeks of HERA operations. The statistical precision of the cavity polarimeter is excellent, and LPOL and cavity results appear to be consistent. With a very systematic analysis, impressive progress has been made resulting in a beam-polarization uncertainty of about 3.5%. All signs are encouraging that a significant decrease in this uncertainty can be achieved. Given the importance of accurate polarization measurements and high-quality data in hand, the PRC recommends that the team should complete the TPOL and LPOL data analysis and the cavity analysis, and should integrate the cavity results into the final polarimeter analysis. The PRC is concerned that the analysis effort still lacks personnel resources for a timely conclusion of the final uncertainties.

Item 4.3: H1 and ZEUS

Item 4.3.1: H1

There was no presentation by the H1 collaboration in the closed session.

T. Lohse presented the referee report for P. Buchholz and himself. The running at low energy was successful, 12.3 pb⁻¹ were taken at a proton energy of 460 GeV and 6.5 pb⁻¹ at 575 GeV. The final H1 data sample for high energies contains 478 pb⁻¹. A reprocessing of all HERA data will be done soon. Grid computing resources will be needed for Monte Carlo production, especially in 2008/2009.

First results are published using the full H1 data sample from HERA I and II. Also first results are obtained using the full HERA data sample of H1 and ZEUS. The combined physics analyses are further strengthened by the seven working groups.

H1 Collaboration is strongly motivated to finalize data analyses for publication and has prioritized the physics analysis topics that should be published until 2010. The collaboration expects a decrease of manpower to about 50% in 2010. Extra attention is needed to guarantee the transfer of knowledge for the analyses.

The PRC continued the discussion in the closed session.

Item 4.3.2: ZEUS

E. Gallo summarized the status of ZEUS. In total ZEUS recorded 0.5 pb⁻¹ data events for analysis. After fifteen years the ZEUS results exceed all expectations.

The flagship analyses are identified and reviewed inside ZEUS. Manpower problems are identified and new students already joined the collaboration to cover the analyses. The overall reprocessing of all HERA II data with a consistent tracking code will begin in early 2008; the analyses are more and more performed on the Grid.

The dismantling of the detector is on schedule.

Y.K. Kim presented the referee report for G. Quast and herself.

The PRC continued the discussion in the closed session.

The PRC congratulates the H1 and ZEUS collaborations for the successful completion of data taking at two low energies, acquiring about 20 pb^{-1} in each experiment. The ZEUS collaboration made rapid progress on their low energy analysis and presented some of these results at PRC64. Both collaborations are currently in the process of producing low-energy results. The PRC is extremely pleased with the two collaborations' significant effort to combine their results, leading to 7 joint working groups. The committee is satisfied that both collaborations have good plans for defining priorities for physics analyses and publishing high priority analyses by 2010/11, and strongly supports their plans. We recommend that the laboratory continue the high level of support for the collaborations to guarantee excellent physics results and publications in the coming years. The PRC recommends that the laboratory support H1's efforts to secure sufficient Grid computing resources for Monte Carlo production, especially in 2008/9. Although the physicist resources to complete important physics analyses appear to be sufficient, the PRC notes that this picture could change when the LHC turns on. The PRC therefore recommends that the experiments and the laboratory pay special attention to the physicist resources.

Item 4.4: HERMES

N. Makins presented the status of the HERMES collaboration. The last year of running with the recoil detector was very successful; 35 million DIS events have been acquired with positron beam and a fully operational recoil system. When HERA was running with proton beams of reduced energy the polarization reached 50%. Physics output from transverse data continues, recoil detector system analysis is underway.

HERMES yields the most precise measurements of hard exclusive asymmetries at high energies and there is an enormous growth of interest in HERMES physics from theory and experimental programs. Especially the exclusive analyses with the recoil detector are complementary to JLab results and are therefore highly prioritized. Several analyses for unpolarized targets brought a new level of precision combining the huge statistics collected in 1998-2007. The HERMES collaboration prioritized the analysis topics regarding also the manpower situation.

The dismantling of the experiment is on track and within the budget.

The referee report was presented by R. Milner for himself and N. Saito.

The PRC continued the discussion in the closed session.

The PRC congratulates the HERMES collaboration for a very successful and efficient end to data taking in which they acquired ~47 million DIS events with the recoil detector. We commend the steady stream of high-quality physics results. We are extremely pleased with the collaboration for establishing a plan for their management and clear analysis and publication priorities for the next few years. The PRC recommends that the collaboration's focus be on analysis of recoil data and that the laboratory continue the

high level of support for the collaboration in order to guarantee excellent physics results and publications in the coming years.

Item 5: LHC Experiments

The LHC schedule is unchanged and beam is announced for end of May 2008. The construction and assembly at the surface has come to an end; enormous effort is going into the commissioning and integration of the system.

Item 5.1: Review of ATLAS

There was no presentation from the ATLAS group in the closed session. J. Timmermans presented the referee's report for J. Brau and himself. Since the last PRC meeting the group has grown substantially and is now joined by a young investigator group. Service tasks covered by the DESY ATLAS group are trigger configuration and monitoring, development of algorithms of shower simulations and technical maintenance of MC generator interfaces and physics validation. DESY contributions including those to the ALFA (Absolute Luminosity For ATLAS) project are on schedule. The laboratory and beam tests of the Roman Pot detector will be completed in 2008 and followed by installation of the full system in late 2008, early 2009. Physics studies and the preparation of data analysis are going on.

Item 5.2: Review of CMS

There was no presentation from the CMS group in the closed session. J. Timmermans presented the referee's report for J. Brau and himself. Meanwhile the DESY CMS is a very active group with five main activities: top-quark physics; high-level trigger and DAQ; technical coordination; computing, software installation, MC production and tracker alignment; and the activities for the CASTOR calorimeter. A further increase of the group size is desirable, especially more PostDocs are welcome.

Item 5.3: Review of LHC Computing

There was no presentation from the LHC Computing group in the closed session. J. Timmermans presented the referee's report for J. Brau and himself. The Tier 2 centre ramp up well and is on track at DESY Hamburg and Zeuthen. New challenge is the set-up of a site independent National Analysis Facility (NAF) for remote operation. NAF is part of the Helmholtz Alliance and aims at fast and easy access to data as well as at a more personalized environment than the Grid. Funding of a third party is needed for the Grid.

The PRC continued the discussion with the LHC groups in the closed session.

The PRC notes that DESY has many excellent opportunities with the LHC experiments including involvement in physics analysis, high-level trigger and data-acquisition systems, software, commissioning and technical coordination, forward detectors and their physics, computing with a Tier-2 center, and the SLHC detector upgrades. Both the ATLAS and

CMS groups at DESY have grown substantially and have been making a real difference to the experiments. They are well respected by the collaborations. Both groups receive adequate support from the laboratory. With a close collaboration with the Humboldt University group and an assistant professor at University of Hamburg, the DESY ATLAS group focuses on high Pt physics, computing infrastructure, high-level trigger, fast shower simulation, generator interfaces and physics validation. With a close collaboration with Hamburg University, the DESY CMS group focuses on software development for high-level trigger, data quality monitoring, technical coordination and integration at CERN such as beam radiation monitors, computing coordinator at CERN, tracker alignment, high Pt physics analysis, and a very forward calorimeter, Castor. The PRC supports DESY's plan of setting up a ROC (Remote Operations Center) at DESY. Our committee acknowledges successful progress on computing with Tier-2 centers and the needs for 3rd party funding for GRID. The PRC is concerned that not enough resources are set aside for analyzing Monte Carlo event samples. We recommend that both experiments focus on their currently committed areas and do not expand these further.

Item 6: Review of Particle Astrophysics (IceCube)

C. Spiering reported the status of the Experimental Astroparticle Group at DESY Zeuthen. The group activities are distributed to IceCube, IceTop, South Pole Acoustic Test Setup (SPATS), Cerenkov Telescope Array (CTA) and DOM production. The multi-messenger approach and participation in MAGIC is broadening the profile of the group. The group is joined by a young investigator group.

The Baikal mission will be completed in 2008.

The DOM assembly will be completed in 2008. The IceCube physics phase with high discovery potential has now started. For the endgame phase of IceCube several options are considered to increase the sensitivity either by a deeper bore or a wider outer ring with strings. CTA is the prioritized project of ApPEC and will complement and extend the physics reach of IceCube. After the design study (2008-2010), prototype operation should start in 2012. Germany plays a strong role in CTA, the HGF participation would add experience in sustainable running and managing of large infrastructures, in designing operation and control systems and in the large scale data processing. But the CTA manpower at DESY has to be increased to reach a critical mass.

G. Anton refereed the status of the astroparticle physics projects. The mission of the Baikal project has been completed successfully; the membership in Baikal will be terminated in 2008. Amanda is integrated into IceCube DAQ and is expected to be operated for another two years. Possible successor could be a low energy extension inside IceCube which is considered as one endgame option. The construction work for IceCube is ongoing and will be completed in 2011; the commissioning is very fast due to experience from Amanda.

The SPATS system was deployed in 2006/2007. First test results of acoustic detection possibilities are very promising; improvements are expected with a fourth string in 2008. Long-term observation of acoustic background will allow a quantitative description of the acoustic sensitivity to neutrino signals. DESY is the leading group in that field.

Gamma ray telescoping is a very active field and an ideal complement to neutrino probe. DESY's strong multi-messenger activities and capabilities fit well to CTA needs and would strengthen the German community.

The PRC continued the discussion in the closed session.

The PRC acknowledges that the IceCube project is running well. The very low failure rate of DOMs is a great success. The commissioning of the detector is rapid and profits from experience gained with Amanda. The DESY group contributes significantly to the physics analysis and is leading in multi-messenger investigations, especially by the close collaboration with gamma ray experiments. The deployment of acoustic sensors in the last season allowed first insight into the acoustic properties of the South Pole ice. Further evaluation will employ components to be deployed in the next season. The set-up should then enable the determination of the attenuation length and the absolute noise level in the ice. Different so called "end-game options" for the implementation of the last IceCube strings have been presented. The PRC recommends that the decision on these options be prepared in the IceCube collaboration and the participation of DESY be discussed at the next PRC meeting. Similarly, the PRC acknowledges the DESY contributions to the design study of a next generation gamma ray experiment (CTA) and recommends that the level of further engagement in this field be discussed together with the application for the next POF period on the next meeting.

Item 7: Review of ALPS

The status of ALPS was presented by A. Lindner. The ALPS experiment has successfully finished its pilot running phase. Some delay in the schedule of the experiment occurred and is mainly due to a later delivery of the high-power laser. The data analysis of the pilot phase was still ongoing at the time of the PRC meeting; no evidence for the production of light ALP has been found. The sensitivity in the search for axion-like particles was similar to previous and competing experiments and is expected to be improved beyond that in the next phases of the experiment in particular with higher photon flux, an improved alignment and an advanced camera.

J. Kühn presented the referee report for G. Quast and himself. The test measurements in the pilot phase explored the low mass region of axion-like particles of about 0.1 meV; the originally proposed measurements will be possible in April 2008.

According to the modified programme of the ALPS collaboration the measurements at the low-mass region will start in December 2007 with the high-power laser. In the following phases the sensitivity will be increased by using a new camera, phase shifting plates will be inserted to reach the PVLAS sensitivity in the mass range of 2 meV, and the search for 'chameleon fields' will be performed.

Before considering significant extensions of the ALPS programme complete information on costs, schedule, resources and physics motivation are requested.

The PRC continued the discussion in the closed session.

The PRC reviewed the ALPS proposal in Feb. 2007 and recommended that it proceed. Since then a sign error in theoretical calculations led to a modified proposal. Despite a lower sensitivity due to this error, the PRC in May 2007 recommended proceeding since the main goal of checking the PVLAS signal remained achievable. The current situation is that the axion-like signal reported by PVLAS is no longer reproduced by PVLAS and is also excluded by GammeV at Fermilab and BMV at Toulouse. Due to these facts and due to some time delays in the setting up of ALPS, the experiment has modified its plans and will improve their sensitivity beyond the existing experiments before April 2008. The PRC recommends completion of the experiment with this existing set-up according to the plans presented as soon as possible, and will review the next steps pending the outcome of the experiment and the international situation. The PRC recommends authors should continue their close contact with the DESY management.

Item 8: Internal Target Experiment at DORIS

Based on reports from external referees the DESY PRC discussed the proposal for an experiment at DORIS suggested at the 63rd PRC meeting.

The PRC formed an external referee group to review the proposal of a possible new experiment at DORIS using the available MIT-BLAST detector and an unpolarized hydrogen gas target. The goal of the experiment is to determine the contribution of multiple photon exchange processes and to resolve the existing discrepancy in lepton-nucleon scattering data. Dedicated data taking for one month per year for several years would be sufficient to carry out the experiment. The external referees strongly support the physics case. The PRC thus recommends that the DESY management discuss this new experimental opportunity with the accelerator group.

Item 9: AOB:

Facing the lack of in-house particle physics experiments at DESY and the international developments of large facilities, the role of the PRC has to be adjusted.

The date for the next meeting will be chosen in coherence with the preparation of the HGF evaluation.

The current list of PRC referees is:

P. Buchholz, T. Lohse:	H1
R. Forty:	HERA-B
R. Milner, N. Saito:	HERMES
Y.-K. Kim, G. Quast	ZEUS
G. Anton:	AMANDA/IceCube
P. Buchholz, R. Milner:	POL2000
J. Brau, J. Timmermans:	R&D for the ILC
W. Hollik, J. Kühn:	Theory
J. Brau, J. Timmermans	LHC

W. Hollik, J. Kühn,
T. Lohse, G. Quast Low Energy HERA Running
J. Kühn, G. Quast ALPS

Invited Reviewers:

J. Gayler R&D for the ILC: FCAL
D. Pitzl R&D for the ILC: CALICE

(S. Riemann – March 2008)

