Short Minutes of the BVR 41
Meetings of February 18 – 19, 2010

1 Meetings of the Committee

closed meetings: Thursday, February 18, from 9:00 – 12:10
Friday, February 19, from 9:00 – 11:10

present: A. Blondel (on Thursday)
D. Bryman
P. Cenci
B. Filippone
C. Hoffman (chair)
S. Paul
J. M. Pendlebury
M. Pohl
M. Ramsey-Musolf
R. Rosenfelder (secretary)
U. Straumann
excused: G. Colangelo

local consultant: C. Petitjean

ex officio: K. Clausen
K. Kirch

2 New Proposals

R-10-01: Lamb Shift in Muonic Helium (R. Pohl, F. Kottmann *et al.*)

This new proposal follows the very successful muonic hydrogen experiment. The Committee thinks that this will be a useful measurement to make as it will shed light on several physics puzzles raised by the previous experiment. The Committee approves this proposal. In view of the new X-ray detector to be built, the Committee would like to obtain an update of the status of the experiment next year. There are possible scheduling conflicts in $\pi E5$ with the MEG experiment in 2012. The Committee prefers not to address these conflicts for the time being.

R-10-02: Pion induced Change of Material Parameters in Silicon (T. Rohe *et al.*)

The Committee feels that this is an important and useful set of measurements since PSI is the only place in the world to do them. It therefore approves this proposal for a run in 2010. We expect a new request next year for irradiation of additional devices.

3 Progress Reports and Beam Requests

The Committee received 10 Progress Reports of which 7 were presented orally in the afternoon session on Thursday (February 18).

The Committee thanks all speakers for their presentations which were very helpful and informative. It also acknowledges the written status reports by the MuCap, FAST and muLAN collaborations which do not request further beam time. We eagerly await the final published results.

R-98-03: Lamb-Shift in Muonic Hydrogen (F. Kottmann, R. Pohl *et al.*)

The Committee is thrilled by the last-minute success of the experiment and expresses its congratulations to the collaboration. We are looking forward to the publication of the surprising results which probably will stir up a lot of discussion and theoretical investigation.

R-99-05: Search for $\mu^+ \to e^+\gamma$ (T. Mori, A. Baldini *et al.*)

There was a separate day of presentations of this experiment on Wednesday (February 17). The Committe notes that last year an almost complete working version of the detector was used for the first time. Since 3 weeks of beam time was given to the μp-collaboration, the amount of data taken was nevertheless smaller than in the year before. The subtle, long-term problems with the HV drift chambers were solved admirably but there is still a lot of work to do including work on the e^+-detection efficiency. This will be addressed in more detail in the separate report of the Technical Review Subcommittee (A. Blondel, A. Ceccucci, P. Cenci, C. Hoffman). The experiment will run during the entire beam cycle in the $\pi E5$ area. The Committee requests a written progress report in midsummer.

R-05-01: Precise Measurement of the $\pi \to e + \nu$ Branching Ratio (D. Pocanic, A. van der Schaaf *et al.*)

The Committee appreciates the written and oral presentation of the PEN experiment. They had a long run last year yielding sufficient statistics for a precision measurement of the $\pi \to e+\nu$ branching ratio. The run this year will use a new TPC closer to the stopping target. Beam conflicts will reduce the 2010 run slightly. The Committee feels that the experiment is making good progress and that this may be the last year of data taking.

R-05-03: Measurement of the Neutron Electric Dipole Moment (P. Fierlinger, K. Kirch *et al.*)

This is a major project on which a separate report by the EDM subcommittee will be prepared. The Committee is convinced that good progress is being made: the collaboration continues to grow in size and expertise. The phase II detector is being mounted and development of the next generation detector seems to be on track. This should be an exciting year for the UCN source (R-00-03) with the first operation expected.

R-07-01: A Precision Measurement of the Neutron Lifetime in a Trap with Superconducting Magnets (R. Picker *et al.*)

The Committee acknowledges the written report of the PENeLOPE collaboration which doesn't need beam time in the near future. Unfortunately, problems with the magnet design have surfaced so that the schedule of this ambitious experiment has suffered some delays.

R-08-01: Muon Capture on the Deuteron - The MuSun Experiment (P. Kammel, C. Petitjean, A. Vasilyev *et al.*)

The theoretical motivation for this experiment has been clarified by several experts in the field: a precise measurement will be important for astrophysics and future solar neutrino experiments. From the experimental point of view the proposed TPC is very challenging requiring a very large investment in new technology. The Committee considers the group strongly motivated and experienced but considers it unlikely that the experiment could be finished before 2012 when the present $\pi E3$ beamline will be turned over to the high-field μSR experiment. Nevertheless, we feel this is a very important experiment and we want to see this measurement performed at PSI. Tests on an alternative beamline ($\pi E1$) to determine whether it is suitable for MuSun will be performed this summer. In view of the importance of this project the Committee strongly endorses these tests and hopes that PSI will support the efforts to move the experiment when necessary.

4 Miscellaneous

M. Ramsey-Musolf (University of Wisconsin-Madison) gave an Invited Talk on "Precision Probes of the New Standard Model: A Theoretical Perspective" in the Open Users Meeting on Wednesday afternoon before the presentations of the experiments. These overviews have now become a standard and very useful part of the Open Users Meetings.

5 Next Meeting

The next meeting (BV 42) is again planned as a 3-day meeting, tentatively for Wednesday - Friday, February 16 - 18, 2011. The first day will be devoted to reviews of the MEG and neutron EDM experiments.

The Committee notes that this was Roland Rosenfelder's final meeting with us. We thank Roland for his many years of service, for his wise advice, and for his serving as Committee Secretary for the past several years.

March 2, 2010 C. Hoffman, R. Rosenfelder