Short Minutes of the BVR 30
Meetings of January 17/18, 2000

1 Meetings of the Committee

closed meetings: Monday, January 17, from 9:00 – 12:30
Tuesday, January 18 , from 9:00 – 12:05

present: D. Bryman
C. Hoffman
J. M. Pendlebury
J. P. Perroud
L. Tauscher
P. Truöl (chair)
G. Wagner
D. Wyler (on Monday)

as special consultant: D. Schinzel (CERN) on Tuesday

local consultants: M. P. Locher
C. Petitjean
R. Rosenfelder (secretary)

as observer from the "Forschungskommission": Q. Ingram

ex officio: R. Eichler (partly on Tuesday)

2 New Proposals

2.1 R-00-01.1: Measurement of Total $\pi^- p$ Charge Exchange Cross Section at Low Energies (E. Friedman *et al.*)

Recommendation : The committee considers this experiment in principle as a valuable contribution to the knowledge of the πN interaction if the accuracy aimed at is achieved. However, from the proposal and the presentation during the open session the members of the committee became not convinced that this accuracy can indeed be reached. Therefore the committee defers the decision until the different contributions to the systematic errors of this experiment have been carefully evaluated and modelled.

2.2 R-00-02.1: A Measurement of Muon Multiple Scattering for Ionisation Cooling Studies (T. R. Edgecock *et al.*)

Recommendation : The committee was informed that an identical proposal was submitted and accepted at TRIUMF. In view of this and an explicit preference of performing this experiment at TRIUMF the committee sees no reason to recommend this proposal at PSI.

2.3 R-00-03.1: Proposal for an Ultracold Neutron Facility at PSI (M. Daum, J. Sromicki, A. Serebrov *et al.*)

Recommendation : The committee strongly supports the idea of building an intense UCN source at PSI with the intent of improving the accuracy of the measurement of the neutron EDM by an order of magnitude. It considers this as a leading experiment for nonstandard T-violation and invites the collaboration to submit a proposal for the proper experiment. The proposed design of an ultracold neutron facility is considered to be robust and seems technically feasible within the financial frame given. Therefore the committee recommends that PSI takes the necessary steps to install it. For the long range planning a larger experimental area than presently available might be advantageous, if other experiments are proposed for the facility.

2.4 R-00-04.1: Measurement of ^{11}N Ground State via the $^{11}B(\pi^+,\pi^-)^{11}N$ Reaction (K. Föhl *et al.*)

Recommendation : Double charge exchange has a history and a potential for studying exotic nuclei far away from the stability a knowledge of the ground state of ^{11}N will be valuable for astrophysical applications. However, the expected statistical accuracy and energy resolution are marginal for the purpose. Therefore the committee recommends this proposal with low priority.

3 Addendum

R-97-01.2 : Measurement of the $\pi^- p$ Analyzing Power at Low Energies with LEPS and a Polarized Scintillator Target (R. Meier *et al.*)

Recommendation : The committee considers the motivation for the experiment and the proposed technique as solid and thinks that the required beam time should be granted.

4 Systematics Report

R-99-06.1 : Study of Systematic Errors in the Measurement of the μ^+ Lifetime (G_F) with the FAST Detector (J. Kirkby, M. Pohl *et al.*)

Recommendation : The committee considers the detailed report as convincing proof that serious attempts have now been undertaken to estimate the systematic errors and recommends approval of the experiment. Since different systematic errors are to be expected in the μLAN and the FAST experiment, two independent experiments may be useful to reach the high accuracy aimed at for the muon lifetime.

5 Beam Requests and Progress Reports

R-87-03: Search for μe Conversion (A. v. d. Schaaf *et al.*)
One week ahead of BV30 the collaboration found from a prelimary analysis of the '99 data that a major part of the spectra are heavily contaminated with pion-induced background. An updated progress report was submitted to the committee on short notice. In view of the importance and the great physics interest in getting lower limits for the μe conversion, the committee expresses continuing support for the experiment and recommends that the beam time should be scheduled. However, a report is expected by March containing the results of the ongoing analysis and suggesting means to reduce the pion contamination to tolerable levels. The committee also notes that this experiment lacks manpower and appeals to the PSI management to alleviate this situation.

R-89-01: A Precise Measurement of the $\pi \to \pi^0 e^+ \nu$ Decay Rate (D. Počanić *et al.*)
The committee is very satisfied about the running of this experiment and the preliminary results shown in the open presentation. It fully supports the beam time request.

R-98-03: Lamb-shift in Muonic Hydrogen (F. Kottmann *et al.*)
The committee acknowledges the progress report for this experiment which contains a paper about the 2S-metastability of μp. In view of beam time overbooking in πE5 by experiments in the production phase it considers 4 weeks of beam time as sufficient for test purposes.

6 Progress Monitoring

R-99-05.1 : Search for $\mu^+ \to e^+ \gamma$ Down to 10^{-14} Branching Ratio (T. Mori *et al.*)
The committee is impressed by the progress since the last meeting when this experiment was approved and is satisfied with reaching the first "milestones" along the long road to a successful experiment.

7 General Issues

At the end of the last meeting in which Milan Locher participated the chairman thanks him for his advice and extraordinary services during many years. In the name of the committe he says a "warm good-bye to Milan".

8 Next Meeting

The next meeting (BV31) is planned for Tuesday/Wednesday June 27/28 2000. Progress reports are then expected from

R-87-03 (v. d. Schaaf *et al.*, already in March)
R-94-10 (Fetscher *et al.*)
R-97-05 (Kammel *et al.*)
R-97-06 (Prieels *et al.*)
R-99-05.1 (Mori *et al.*)
R-00-03.1 (Daum *et al.*).

January 27, 2000 P. Truöl, R. Rosenfelder