Short Minutes of the BVR 28

Meetings of January 12/13, 1999

1 Meetings of the Committee

closed meetings: Tuesday, January 12, from 9:00 – 13:00
Wednesday, January 13, from 9:05 – 12:45

present: D. Bryman
C. Hoffmann
J. P. Perroud
R. T. Siegel
L. Tauscher (on Wednesday)
P. Truöl (chair)
G. Wagner
D. Wyler (on Tuesday)

as consultants: D. Herlach (μSR coordinator, on Tuesday)
M. P. Locher
C. Petitjean (coordinator)
R. Rosenfelder (secretary)

as observer from the "Forschungskommission": Q. Ingram

ex officio: R. Eichler (partly, on Tuesday)

2 New proposals

R-98-03.1 Laser spectroscopy of the Lamb shift in muonic hydrogen (F. Kottmann *et al.*)

- The committee approves this technically challenging experiment to measure the proton radius. While it is more confident about the performance of apparatus and the laser system it feels that the proposal only presents evidence for the crucial 2S metastability but no explicit proof of it. Also the experiments aimed to show it have been analyzed up to now in an unusual manner. A detailed report on the metastability measurements or preferentially a publication in a standard peer-reviewed journal should be made available before the first beam time (in 2000) is taken.

R-99-01.1 Search for exotic muon decays (R. Bilger *et al.*)

- The committee accepts this proposal whose physics motivation it considers as interesting. The experimental technique used appears to be quite reasonable.

R-99-02.1 Pion charge exchange on protons at low energies (R. Meier *et al.*)

- The committee believes that a precise measurement of charge exchange reactions at low energies will make a valuable contribution to the knowledge and further theoretical analysis of the pion-nucleon interaction. The proposal is therefore accepted as far as the asymmetry measurements are concerned. Since the experiment depends on the availability of the Neutral Meson Spectrometer (NMS) which is presently used at Brookhaven, the schedules and the covering of transport costs should be clarified as soon as possible.

R-99-03.1 To measure yields, angular- and energy-distributions of neutrons following proton-induced spallation on a thick lead/bismuth target at $E_p = 300$ MeV by activation analysis and time-of-flight (M. B. Goldberg *et al.*)

- The committee decides to reject this proposal in the present form as it does not meet the required standards at PSI. The physics motivation to do this experiment is considered insufficient, recent results from the Rubbia group at CERN are ignored and the apparatus appears to be incomplete . The committee believes that the proposed experiment may only be performed at PSI as part of a test for specific technical application, which does not have to be judged as part of the research program.

3 Letter of intent

R-99-04.0 Activation analyses with stopped negative muons to measure potassium contamination in the liquid scintillator of the solar neutrino experiment Borexino
(G. Heusser *et al.*)

- The committee considers the proposed test worthwhile to be performed, because it will be helpful for an important outside experiment.

4 Beam requests

R-87-03 Search for μe conversion (A. v. d. Schaaf *et al.*)

- The physics priority of this experiment is still considered as very high and the beam time asked for should be given. It is hoped that the sensitivity mentioned during the presentation can be achieved and the effort be concluded next year despite an apparent shortage of manpower.

R-89-01 A precise measurement of the $\pi^+ \to \pi^0 e^+ \nu$ decay rate (D. Počanić *et al.*)

- The requested beam time is approved. The committee is satisfied with the recent progress and about the fact that a signal has been seen. It hopes that by the end of the year enough data are available to establish a result that is better than the currently available one.

R-94-10 Measurement of the transverse polarization of positrons from the decay of polarized muons (W. Fetscher *et al.*)

- The requested beam time is approved. However, the committee is worried about the slow progress of this experiment and an inefficient use of beam time. After a presentation of the present status and ensuing discussions during the closed meeting the committee strongly urges the collaboration to take more beam time at an earlier time so that an experimental result below the present limit can be obtained as soon as possible.

R-97-01 Measurement πp analyzing powers at low energies with LEPS and a polarized scintillator target (R. Meier *et al.*)

- In view of the fact that the anticipated polarization was not achieved in the last runs the request for additional beam time is found reasonable and approved.

R-97-02 Precision measurement of the charged pion mass (D. Gotta *et al.*)

- The committee takes notice that the original beam time had to be shifted due to technical difficulties and approves the request. The flux reduction due to the shortening of target E may lead to a possible extension.

R-96-05 Search for a neutral particle of mass 33.9 MeV in pion decay (M. Daum *et al.*)

- After a presentation in the closed meeting the committee believes that the requested beam time is justified. However, the background remains a serious problem in the present setup and further measurements should only be continued after a serious redesign, which would imply a new proposal.

5 General issues

The committee acknowledges the speakers of the presentations made in the open as well in the closed session of the meeting. It thanks Bob Siegel for serving in the committee over many years as an expert in muon-oriented physics. Possible candidates for his replacement are discussed and the suggestion is endorsed to enlarge the committee by an expert for the field of neutron physics. Concerning the shortening of target E it is recommended that such a switch should be only made if it is reversible and does not affect adversely those experiments which crucially depend on the highest flux of muons and pions.

6 Next meeting

The next meeting BV29 is planned for Tuesday/Wednesday July 6/7 1999. The dead line for BV29 concerning beam requests, new proposals and addenda is May 28 1999.

January 15, 1999 P. Truöl, R. Rosenfelder