



EUROPEAN LABORATORY FOR PARTICLES PHYSICS

CERN/SPSC 98-22
SPSC 39
8 September 1998

SPS AND PS EXPERIMENTS COMMITTEE

Decisions taken at the 39th meeting on 2 September 1998

OPEN SESSION

- *QED in strong crystalline fields* [NA43] : E. Uggerhøj.
- *Proposal to study the use of a crystal as a 'quarter-wave plate' to produce high energy circularly polarized photons* (SPSC 98-17 / P308) : M. Velasco.
- *A CERN-PS experimental campaign to measure neutron cross-sections from 1 eV to 250 MeV with high resolution* (SPSC 98-15 / I220): C. Rubbia and N. Pavlopoulos.
- *The Advanced Cosmic Composition Experiment at the Space Station [ACCESS]: A request for test-beam facilities at the CERN SPS* (SPSC 98-13 / M608) : R. Wigmans.
- Status report from MICROMEGAS : I. Giomataris.

CLOSED SESSION

Present: P. Bagnaia, J.-P. Blaizot, W. Braunschweig, M. Cavalli-Sforza, A. De Roeck, Y. Déclais, D. Drijard (Secretary), L. Foà, G. Goggi, K. Hübner, K.-H. Kissler, B. Koene, K. Königsmann (Chairman), A. Pich, L. Ristori, J.-P. Riunaud, D. Simon, J. Stachel, E. Tsemelis, M. Tyndel, D. Websdale, G. Wilquet*, A. Zalewska.

* Part-time

Apologies: P. Grafström, D. Jacobs, K. Jakobs, R. Landua, M. Neubert, M. Pennington

1. Approval of the minutes:

The minutes of the 38th meeting were approved without modifications.

2. Report on the meeting of the Research Board:

The Research Board approved the reduced set up of COMPASS [NA58] and encouraged the joint meeting between INFN and SPSC to decide about the scientific programme of the neutrino beam to the Gran Sasso (see point 9 below).

3. Report on the CERN Neutrino beam to Gran Sasso:

The Director of Accelerators gave a brief oral progress report on the activities of the technical CERN-INFN committee studying a neutrino beam from the SPS to the Gran Sasso Laboratory. Work is continuing on low- and high-energy beams and on a reduced cave for a near detector. Datafiles describing the beams will be available by the end of September and information will be posted soon on the CERN WEB pages, to be updated as the study progresses. The new planning assumption is that the civil engineering adjudication will be made by September 1999.

4. Status report on the SPS:

The SPS had been running well with performances nearly as good as in 1997. The numbers of protons on target at the time of the meeting were $2.1 \cdot 10^{19}$ and $1.6 \cdot 10^{19}$ for all experiments and for neutrino experiments respectively.

5. Status report on the PS:

The fault rate intrinsic to the PS complex had been of 7 %, but globally of 9.7 % when power cuts and thunderstorms are included. The results are as good as before, as testified by the report on the SPS above. The re-organisation of the East Hall was under schedule. The beams T7 Irradiation Area I, T11, T10 (ALICE) and T9 (ATLAS/CMS) were in operation since 13/7, 13/7, 3/8 and 31/8 and respectively. T7 (LHCB) is ready and T8 (DIRAC) is scheduled for the end of October.

The installation of the AD is proceeding well: the first tests will be conducted during September, experimenting deceleration – on protons – by the end of the month; the tests with antiprotons should happen at the beginning of December.

6. Status report on SPS experiments:

The co-ordinator presented the status of the experiments:

CHORUS had finished the calibration of the muon spectrometer and, jointly with NOMAD, had taken ν data in parasitic mode; the benefit obtained this year from the beam was very much appreciated by the collaboration.

NOMAD had a successful data-taking since April; by the end of the 1998 run they will have collected 300,000 ν_{μ} CC in addition to the 1,000,000 collected in 1995-1997.

Both experiments showed preliminary limits on $\nu_{\mu} \rightarrow \nu_{\tau}$ oscillations at Summer conferences.

NA45 hopes to have all its components ready for its heavy ion engineering run.

NA48 had a successful long physics run this year and thanked SPS teams for the good performance; they are confident to reach the proposed accuracy of $2 \cdot 10^{-4}$ on ϵ'/ϵ .

NA49 had problems with its cryogenics installation which prevented it from taking proton data during the summer. Its Vertex-Magnet-2 is currently being repaired following a quench and is expected to be available again mid-October. The proton reference data planned for September will not be taken.

7. Discussion of the open session:

7.1 Letter-Of-Intent I220:

The committee heard with interest the presentation of the speakers. It asked the PS and TIS Divisions to conduct a feasibility study of the test facility and report at the next SPSC meeting (3-4 November). It asked the collaboration to submit specific examples for each field of physics mentioned in the L-O-I, which demonstrate the advance in knowledge gained by these measurements and which show that the contemplated test facility is particularly well suited to answer these questions.

7.2 NA43 and proposal P308:

The committee complimented E.Uggerhøj for the interesting results that the NA43 collaboration has obtained. It recognised the interest of the study of the linear photon polarisation which might later lead to a circularly polarised photon beam. It decided to **recommend** to the Research Board the approval of a 3-week period for this proposal. This run would be scheduled at the beginning of 1999 with linear polarisation studies as its main objective.

7.3 ACCESS:

The committee noted the interest to test a new concept of a light-weight calorimeter for the space station. It decided to leave to the co-ordinator the freedom to allocate time if compatible with the schedule of the other test-beams.

7.4 MICROMEAS:

The committee appreciated the substantial progress made for this type of detector. The time allocation will be decided by the co-ordinator in the same manner as in point **7.3** above. If the time request is larger than 2 weeks, the SPSC will decide after a written document is submitted.

8. Schedules of the machines:

The co-ordinator showed the updated schedule of the SPS fixed target programme and of the PS East Hall upgrade. The preliminary schedules for 1999 were discussed: the PS East Hall would be available for 28 weeks from 26/4 to 29/11 while for the SPS 22 weeks are foreseen for protons from 11/5 to 10/10 and 5 weeks plus 2 days for heavy ions run from 25/10 to 1/12.

9. Any other business:

The chairman announced that the two days of the next meeting will be mainly devoted to neutrino physics in order to collect information on the physics potential of the new beam. The meeting will be common to both the SPSC and the INFN scientific committee for the Gran Sasso.

The dates of the SPSC meetings in 1999 had been tentatively fixed at the following dates:

Tuesday 19 and Wednesday 20 January

Tuesday 30 and Wednesday 31 March

Tuesday 25 and Wednesday 26 May

Tuesday 31 August and Wednesday 1 September

Tuesday 2 and Wednesday 3 November.

The 40th meeting will be held on **Tuesday 3 and Wednesday 4 November 1998.**

The 41st meeting will be tentatively held on **Tuesday 19 and Wednesday 20 January 1999.**

10. Documents received:

Proposal to study the use of a crystal as a “quarter-wave plate” to produce high energy circularly polarized photons (Institute of Physics, Yerevan - INFN and Univ. of Firenze - INFN and Univ. of Torino - CERN, Geneva - INFN, Perugia - Schonland Research Centre, Johannesburg - FERMILAB, Chicago - NIKHEF, Amsterdam - Kurchatov Institute, Moscow - Institute for Storage Ring Facilities, Univ. Aarhus - Univ. of Santiago di Compostela - DESY, Hamburg - Inst. of Nuclear Physics, Novosibirsk - Univ. of California, Los Angeles); CERN/SPSC 98-17 / P308.

Letter of Intent: *A CERN-PS experimental campaign to measure neutron cross sections from 1 eV to 250 MeV with high resolution* (CEN, Bordeaux-Gradignan - CERN, Geneva - CRS4, Cagliari, Italy - EC, Joint Research Center, IRMM, Geel, Belgium - Univ. of Basel - University of Thessaloniki); CERN/SPSC 98-15 / I 220 (also ref. CERN/LHC/98-02 (EET), CERN/LHC 98-02 (EET)-ADD.1).

Addendum to Letter of Intent CERN/SPSC 97-5/I213: *A high sensitivity short baseline experiment to search for $\nu_{\mu} \rightarrow \nu_{\tau}$ oscillation* (METU, Ankara - Univ. di Bari and INFN - Humboldt Univ., Berlin - Inter-Univ. Institute for High Energies (ULB-VUB), Brussels - Dortmund Univ. - JINR, Dubna - Univ. di Ferrara and INFN - Toho Univ., Funabashi - CERN, Geneva - Technion, Haifa - Kobe Univ. - Univ. Catholique de Louvain, Louvain-La-Neuve - Univ. of Michigan, Ann Arbor - Inst. Nucl. Research, INR, Moscow - ITEP, Moscow - Münster Univ. - Nagoya Univ - Univ. Federico II and INFN, Naples - Univ. di Padova and INFN - Univ. La Sapienza and INFN, Roma - Univ. di Salerno and INFN, Salerno); CERN/SPSC 98-20 / I213 Add.1.

The Advanced Cosmic Composition Experiment at the Space Station [ACCESS]. *A request for testbeam facilities at the CERN SPS (The ACCESS Collaboration)* ; SPSC 98-13 / M608.

CMS experiment: *A request for SPS test beam operation with an LHC-like structure*; CERN/SPSC 98-18 / M609.

ATLAS request for future SPS test beam operation with a 25 ns bunch structure; CERN/SPSC 98-19 / M610.

List of Members, August 1998; CERN/SPSC 98-16 / G12.

Daniel Drijard