



EUROPEAN LABORATORY FOR PARTICLES PHYSICS

CERN/SPSC 99-17
SPSC 43
26 May 1999

SPS AND PS EXPERIMENTS COMMITTEE

Decisions taken at the 43rd meeting on 25 May 1999

OPEN SESSION:

1. Status report from PS211 : J.-P. Revol
2. Status report from NA47 : V. Hughes / R. Windmolders
3. Status report from NA58 : S. Paul

CLOSED SESSION:

Present: P. Bagnaia, , S. Dalla Torre, A. De Roeck, Y. Déclais, C. Détraz, R. Forty, P. Grafström, U. Heinz, K. Hübner, K.-H. Kissler, B. Koene, K. Königsmann (Chairman), W. Kühn, A. Magnon, J. May, E. McIntosh (replacing M. Delfino), A. Norton (replacing G. Goggi), N. Pavlopoulos, M. Pennington, A. Pich, J.-P. Riunaud, T. Ruf, D. Simon, J. Stachel*, E. Tsesmelis (Secretary), D. Websdale, A. Zalewska.

* Part-time

Apologies: W. Braunschweig, M. Cavalli-Sforza, G. Goggi, L. Robertson, M. Tyndel, C. Wagner.

1. INTRODUCTION

The Chairman presented the apologies from members of the Committee.

He also announced that the September meeting of the SPSC has been put back to Tuesday the 14th and Wednesday the 15th of that month. The emphasis will be on the experimental proposals for the Neutrino beam to Gran Sasso (NGS).

2. APPROVAL OF THE MINUTES

The minutes of the 42nd meeting were approved without modification.

3. REPORT ON THE MEETING OF THE RESEARCH BOARD

The Research Board endorsed the SPSC decision to recommend for approval the neutron time of flight facility P310, subject to the funding issues being resolved. It was also stressed that each experiment that will use this facility will have to submit a separate proposal which will be discussed by the ISC and/or the SPSC and that the CERN constitution requires the results to be in the public domain. The new experiment will be known as PS213.

4. STATUS REPORT ON THE SPS

The SPS has been running well. Typical SPS intensities for 1999 are $1.5 \cdot 10^{13}$ protons per cycle, significantly reduced from recent years due to the termination of the neutrino programme. The reduced intensity has resulted in a higher transmission, typically greater than 98%, giving rise to lower losses in the machine. The duty cycle of the slow spill has also improved compared to last year. The present objective of the SPS is to improve the availability of the machine from the current 75.7% to greater than 80%.

5. STATUS REPORT ON THE PS

All milestones scheduled to prepare the PS Complex for the LHC were reached in March 1999, including the increase of the transfer energy from the PS Booster to the PS to 1.4 GeV. The PS Complex has been operating well. Typical intensities of $8.5 \cdot 10^{12}$ protons per cycle are provided to the SPS, significantly reduced compared to recent years owing to the SPS experimental requirements, while $4.0 \cdot 10^{11}$ protons per cycle are sent to the PS East Hall.

The commissioning of the AD is progressing well, with the first proton beams to the AD injected at the end of April. The AD optics have been checked to be correct at 3.5 GeV/c and the deceleration to 550 MeV/c has been successful. Deceleration to below 200 MeV/c has been attempted without any cooling. Present studies are focused on adjusting both the stochastic and electron cooling.

6. STATUS REPORT ON THE SPS AND PS EXPERIMENTS

The Coordinator presented the status of the experiments. All users have so far successfully fulfilled their planned programme. NA59, whose ultimate goal is the study of a circularly polarised photon beam, has commenced their experiment with the measurement of the degree of linear photon polarisation. The alignment of the Si crystal has been performed and measurements of the energy loss have been taken. They plan to make a direct measurement of the polarisation using the reaction $\gamma p \rightarrow \rho^0 p$, $\rho^0 \rightarrow \pi^+ \pi^-$. NA48 has set up their detector with a muon beam and the K_L and K_S beams are also in operation. Data-taking for ϵ'/ϵ has commenced. OPERA has tested emulsion targets in the PS East Hall for a possible future neutrino experiment.

7. DISCUSSION ON THE OPEN SESSION

7.1 PS211:

The Committee **congratulates** the collaboration for their successful and careful study of the phenomenology of neutron spallation in lead, including tests of the Adiabatic Resonance Crossing transmutation technique, and for the efficient utilisation of the available beam-time. The collection of good quality data and a rigorous analysis have provided excellent results. The Committee is also pleased with the development of simulation tools using Monte Carlo techniques, for which there exists excellent agreement with the entire PS211 experimental data set.

7.2 NA47:

The Committee is pleased with the final status report of the experiment as presented in the Open Session. The Committee **congratulates** the collaboration for their important contributions to the understanding of the spin structure of the nucleon and for the successful development of new experimental techniques in the fields of polarised targets and beams.

7.2 NA58:

The Committee appreciates the amount and quality of the ongoing work performed by the Collaboration. In order to monitor the future progress of the experiment, the Committee requests a written report providing details on the present achievements, the schedule with a list of milestones for the construction and running of the experiment, the experiment's funding and manpower profiles and fall-back solutions to the present baseline choices for the tracking detectors.

8. LETTER OF INTENT SPSC 99-15 / I221

The Committee recognises with great interest the importance of the scientific programme to be addressed by the study of dimuon and charm production in heavy ion collisions at the SPS. The Committee will explore the long-term prospects for such a programme, especially in view of the uniqueness of the charm physics. To this aim the Committee **encourages** the interested community to pursue their studies and to continue with their preparatory experimental design work.

9. CERN NEUTRINO BEAM TO GRAN SASSO

The Director of Accelerators presented a progress report on the activities of the CERN-INFN Technical Committee studying the Neutrino beam to Gran Sasso (NGS). The report describes further improvements on the NGS design and performance obtained from new scenarios for the SPS proton cycles for NGS operation and a new version of the NGS 'high-energy' neutrino beam for ν_τ appearance experiments. This new NGS reference beam is estimated to provide three times more ν_τ events per year than the beam presented in the 1998 report. The radiological aspects of the NGS facility have been re-examined with the new beam design and an updated version of the construction schedule has also been produced.

10. SCHEDULES OF THE MACHINES

The Coordinator showed the updated schedules of the 1999 SPS and PS Fixed Target Programmes. He also outlined the tests at the LPI in 1999. The main users of this irradiation facility are the LHC machine, CMS and LHCb. As in 1998, the Coordinator will allocate the beam time, subject to its compatibility with LEP operation.

11. ANY OTHER BUSINESS

The referee for P309 reported that the Collaboration is preparing a memo on their optimised measurement programme together with the results of Monte Carlo simulations of the positron reconstruction efficiency. The memo will be available for the September session of the SPSC.

The 44th meeting will be held on **Tuesday 14 September** and **Wednesday 15 September 1999**.

The 45th meeting will be held on **Tuesday 2 November** and **Wednesday 3 November 1999**.

12. DOCUMENTS RECEIVED

The I216 Collaboration: Oscillation search with the PS neutrino beam. CERN/SPSC 99-14 / M631.

Study of Dimuon and Charmed Production with Proton and Heavy Ion Beams at the CERN SPS. CERN/SPSC 99-15 / I221.

Emmanuel Tsesmelis