Minutes of the twenty-seventh meeting of the
Proton Synchrotron and Synchro-cyclotron Committee
held on Tuesday, 14 December 1982.

OPEN SESSION

1. The Chairman reported on the decisions taken by the Research Board
   at its meeting on 18 November. The following experiments were approved:

   IS60   Continuation of mass determinations through a double focussing
          mass spectrometer on line with ISOLDE (Orsay CSNSM; PSCC/82-55/P62;
          82-57/S62).

   IS70   Continuation of atomic spectroscopy on alkali isotopes at ISOLDE
          (Orsay CSNSM-Aime Cotton; PSCC/82-63/P63; 82-64/S63)

   IS80   Study of nuclear moments and mean-square charge radii by
          collinear fast-beam laser spectroscopy (Mainz-Goteborg-CERN;
          PSCC/82-61/M123)

   SC95   Muons and muonium in molecular physics (CERN-Leicester-RAL;
          PSCC/82-55/P61; 82-56/S61)

   Test   A (1520) radiative decay strength (Heidelberg-Saclay-Strasbourg;
          PSCC/82-62/M124).

   The latter measurement was originally limited in time because of the
   irradiation problems related to the East Hall schedule. Eventually
   a solution has been found and the group should be able to complete
   the requested data taking before the end of the year.

   The Chairman informed the Committee that T. Ericson, M. Ferro-Luzzi
   and E. Otten are leaving the Committee. He forwarded to them the
   thanks of the PSC community for the excellent work they had accomplished
   on its behalf. To replace them the Director-General has invited
   D. Bugg, S. Pelikanov and A. Thomas to serve on the Committee for a period
   of two years. They have accepted. B. Jonson will take over from
   R. Neugart as SC Coordinator from 1st January, 1982. K. Kilian will
   continue as PS Coordinator. The Chairman also expressed the PSCC's
   appreciation of their work.

2. The following status reports and proposals were presented:

   - Addendum to experiment PS 184 at LEAR (Study of p-nucleus inter-
     action with a high resolution magnetic spectrometer; Grenoble CEN-
     Saclay CEN DPhN-Strasbourg-Tel Aviv; PSCC/82-72/M131; J. Mougey).

   - Status report on experiment PS 188 (Measurements of channelling
     radiation and its polarization and X-ray excitation, together with
     deviations from Landau distributions; Aarhus-CERN-Strasbourg;
     PSCC/82-93/P51 Add.1; 82-94/M147; E. Uggerhoj).

   - 600 MeV simulation of the production of cosmogenic nuclides in
     meteorites by galactic protons (Inst. f. Kernchemie Köln; PSCC/82-88/P65;
     82-89/S65; R. Michel).
CLOSED SESSION


Apologies were received from J. Domingo, H. Ryde, H. Schopper, H. Specht, W. Weise, A. Wetherell.

1. The minutes of the October PSCC meeting (PSCC/82-68/PSCC 26) were approved with the following amendments:

Page 2, line 2, Present: ..... T. Ericson, ..... 2

Page 3, paragraph 2, line 6 unanimous should read unanimous.

Page 4, paragraph 1, line 3 and following becomes:

(as needed for example by laser spectroscopy and direct mass measurements). He felt that the present document is not yet explicit enough in this and other technical respects and characterised it as a letter of intent. G. Le Dallic ....

2. SC SCHEDULE

Following the SC Coordinator's report at the Open Session, no further discussion was felt necessary.

3. PS SCHEDULE

The PS Coordinator, K. Kilian, summarized the presentation he had already made in the Open Session. Assuming that a total of 1000 hours of p would be available for physics at LEAR during 1983, he foresaw that this in the present planning would fall in two parts, one of approximately 200 hours in June-July and the rest starting approximately twelve weeks later (weeks 43-50). The summer run would imply intermittent operation, a few days at a time and was well suited for a LEAR pre-run. Out of this period, Kilian suggested to use approximately 2/3 (130 h) for operation at low momentum (300 MeV/c) and 1/3 (70 h) for operation at high momentum (600 MeV/c). During the pre-run each of the six experimental areas would have roughly equal (40-60%) beam time. Protons from Linac I could be made available for machine tests during most of the year; the total running time with protons for test of experimental installations would, however, be limited by manpower, maybe to 1000-1300 h. The Coordinator finally pointed out that it was essential for the planning to know well ahead of time if one or several LEAR experiments would not be data-taking during the first runs.
The pre-run schedule as proposed was approved after a long discussion. The need for proton runs to tune the apparatus was strongly underlined by U. Gastaldi. R. Klapisch pointed to the importance of monitoring the readiness of the experiments. There was general agreement that a more detailed review of the programme would be required as an input to the detailed scheduling and the setting of first priorities. Such a review could take place in the 3-month break before the main runs begin.

4. SIMULATION OF COSMOGENIC NUCLIDES IN METEORITES AT THE SC (PSCC 82-88/P65)

The Committee heard the referee P.G. Hansen. The group has made a precise and clear presentation of its case, and the irradiation proposed is just a small part of the work to be carried out in various institutes. The Committee recommended the allocation of these shifts as required.

5. CHARGED PARTICLES IN THE BACKWARD DIRECTION FROM p-ANNIHILATION IN NUCLEI (PSCC 82-72/M131)

The Committee heard the referee, M. Ferro-Luzzi. The addendum to PS 184 aims at complementing the data taken at 0-60° by installing additional detectors for p at back angles. The installation of the new counters should not interfere with the layout for PS 174, once a number of points are respected, which were mentioned in a memorandum from the spokesman, J.D. Davies (PSCC/82-97/M148). The part of the addendum dealing with charged-particle emission is related to PS 187, but will give less detailed information; the group itself regards this part as the less important of the two mentioned in the addendum. The Committee recommended the Addendum to PS 184, to be carried out in a completely parasitic mode.

6. CHANNELLING RADIATION AND DEVIATION FROM LANDAU DISTRIBUTION

The Committee acknowledged the success of PS 188, in particular the discovery of "magic" momenta leading to nearly monoenergetic channeling radiation and also the attempts to understand the density effect for inner-shell excitations. It further noted, as also underlined by the referee when the original proposal was accepted, that the interactions of high-energy radiations with matter are fundamental to the detectors of high-energy physics. In order to complete the full programme, the group has requested an extension corresponding to the equivalent of $10^6$ bursts at very low proton intensity. According to information from L. Hoffmann the t/y beam used until now by PS 188 will be maintained as a test beam and can be used for the continuation of this experiment. The Committee recommended the Addendum to PS 188.

7. OTHER BUSINESS

The Chairman informed the Committee that he had received a letter from B. Allardycce informing him that the best solution for the installation of the second separator needed for the ISOLDE-3 now seemed to be the cyclotron-hall version. Detailed study of this solution is now taking place. In this context, C. Bucci, on behalf of the USR Collaboration, has expressed in a letter to the Chairman his concern for the possible suppression of the tN-beam in the proton
hall (which is much better than the μ-beam in the neutron hall). The Committee took note of this problem. The relevance of the pion beams for test purposes at the SC had also been recalled by D. Bugg.

The Chairman announced the dates foreseen for the 1983 PSCC meetings (Open and Closed Sessions):

1st February
12th April
7th June
25th October
15th November (reserve)
6th December.

Maria Fidecaro
The PSCC received the following papers:

- T. Bressani, G. Piragino, P. Quarati
  Memorandum: Measurement of the p-p elastic cross section at very low energies to detect a Ramsauer effect (PSCC/82-69/M128).

- T. von Egidy
  Letter: LEAR schedule (PSCC/82-70/M129).

- R.M. DeVries
  Letter: LEAR schedule (PSCC/82-71/M130).

- D. Garreta
  Memorandum: Addendum to experiment PS 184 at LEAR (PSCC/82-72/M131).

- Th. Walcher
  Letter: LEAR schedule (PSCC/82-73/M132).

- Dubna-Frascati-Padova-Pavia-Torino collaboration
  Memorandum: Measurements producing significant results using a small amount of beam time and under uncertain conditions (PSCC/82-74/M133).

- SING collaboration
  Memorandum: Running time for expt. PS 172 at LEAR (PSCC/82-75/M134).

- S.M. Polikanov
  Memorandum: Beam request at LEAR in 1983 for experiment PS 177 (PSCC/82-76/M135).

- J.D. Davies
  Memorandum: Status and initial beam requirements for PS 174 (PSCC/82-77/M136).

- G.A. Smith
  Letter: LEAR schedule (PSCC/82-78/M137).

- Experiment PS 182
  Memorandum: LEAR setting-up time in 1983 (PSCC/82-79/M138).

- E. Kleempt
  Memorandum: PS 171 experiment (PSCC/82-80/M139).

- P. Dalpiaz
  Telex: LEAR schedule (PSCC/82-81/M140).

- H. Poth
  Memorandum: LEAR beam time (PSCC/82-82/M141).

- D. Garreta
  Memorandum: PS 184 experiment (PSCC/82-83/M142).
- Spokesman of Expt. PS 185
Memorandum: Physics which can be produced in the early running time at LEAR (PSCC/82-84/M143).

- L.M. Simons
Letter: LEAR schedule (PSCC/82-85/M144).

- Aarhus-CERN-Stockholm collaboration
Proposal: Measurements of the ratio between double and single ionization of helium for antiprotons (PSCC/82-86/64; 82-87/S64).

- Institut für Kernchemie, Köln
Proposal: 600 MeV simulation of the production of cosmogenic nuclides in meteorites by galactic protons (PSCC/82-88/P65; 82-89/S65).

- PS Coordinator
Memorandum: Possible LEAR operation in 1983 (PSCC/82-90/M145).

- C. Voci
Letter: LEAR schedule (PSCC/82-92/M146).

- Aarhus-CERN-Strasbourg collaboration
Addendum to the proposal: Measurements of channeling radiation and its polarization and X-ray excitation, together with deviations from Landau distributions (PSCC/82-93/P51 Add. 1).

- Aarhus-CERN-Strasbourg collaboration
Progress report: PS 188 (PSCC/82-94/M147).

- The authors of proposal P56
Addendum: Measurement of the rare decay $K^+ \rightarrow \pi^+ \nu \bar{\nu}$.

- J.D. Davies
Memorandum: Effect of PS 184 addendum on PS 174 (PSCC/82-97/M148).
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