CERN/ISRC/69-40
9 June, 1969

EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

MINUTES OF THE SIXTH MEETING OF THE INTERSECTING STORAGE RINGS COMMITTEE HELD ON 3 AND 4 JUNE, 1969

Present:- W. Jentschke (Chairman), M.H. Blewett, G. Charpak, G. Cocconi, R.L. Cool, C. Franzinetti, B.P. Gregory, F. Heymann, K. Johnsen, E. Lillethun, P. Marin, A. Minten, L. Resegotti, K. Winter.

Since the last meeting, the ISRC received the following papers:

- Addendum to proposal CERN/ISRC/69-7, by the Michigan-Bologna collaboration.
- Addendum to proposal CERN/ISRC/69-8, to measure $p + p \rightarrow p + n + \pi^+$, by Max-Planck-Institute München - CERN - Princeton collaboration (CERN/ISRC/69-8/Add.)
- Addendum to proposal CERN/ISRC/69-16,17, by Scandinavian ISR Collaboration.
- Proposal for the study of general features of inelastic p-p interactions with the ISR by means of nuclear emulsions, by the Cracow Emulsion Group, CERN/ISRC/69-37.
- ISR background studies at the PS, by B.D. Hyams et al., CERN/ISRC/69-38, and NP/Internal Report 69-8, by V. Agoritsas, M. Bott-Bodenhausen and B.D. Hyams.
- CERN/ISRC/69-39, Memo by A.J. Herz regarding vacuum chamber for experiment proposed by Tata Institute, Bombay.

1. The minutes of the Fifth Meeting of the ISRC were approved.

2. G. Cocconi reported that the EEC had approved the schedule for ISR background tests at the PS proposed by Hyams in ISRC/69-38.

3. Discussion of Experimental Proposals

Before the Committee can come to definite conclusions concerning the individual proposals for experiments at the ISR, it seems to be desirable to explore in greater detail some of the questions that were raised at the previous meeting concerning compatibility among groups of experiments.

Several members of the Committee have had preliminary discussions with some of the experimental groups along this line and there now seem to be good possibilities that, in some of the interaction regions, certain groups of experiments may be able to be carried out either simultaneously or alternately.

There has not been time, as yet, to examine all the proposals in this light so that the suggestions outlined below cannot be taken as definitive. In particular, the omission of some proposals from mention at this time is not significant; they will be considered later. The Committee must also remain aware that further proposals for experiments may be submitted during this planning.

Three interaction regions have been examined, along with possibly compatible groups of experiments for these regions. In each case, it is suggested that the groups named below should get together to discuss among themselves the way in which the experiments can be arranged in the given region for most efficient use of the ISR during its initial period of operation. These discussions on compatibility should include the physics involved and the specific experimental effort of each group, the arrangement of the experimental apparatus in both space and time, and the mode of operation of the ISR required (for example, the specific energy, special vacuum chambers, needs for auxiliary equipment or rearrangement of ISR components, etc.).

(a) Interaction Region 2

Since a thorough survey on particle production is an important part of the initial experimental programme for the ISR, it is suggested that this region might be used for these studies by several groups working together, each covering some part of the complete angular range. Proposals that either encompass such studies or include them as part of their work have been made by the following:

1. Bristol -Cambridge, Liverpool -U.C. - Westfield College -RHEL collaboration, (ISRC/69-3).
2. CERN-Holland/Lancaster-Manchester collaboration (ISRC/69-5 and Add.).
3. University of Michigan and Collaborators (ISRC/69-7 and Add.).
4. Scandinavian collaboration (ISRC/69-17, 18 and Add.).

K. Winter was asked to convene members of these groups in order to explore these possibilities and to ask them to provide the Committee with a plan for an initial programme. F. Bonaudi should also participate in the planning for compatible arrangements.

(b) <u>Interaction Region 4</u>

As stated in the minutes of the previous meeting, this region is the location for the large split-field magnet and preparations for its use are the subject of study by the Working Group that is being coordinated by G. Charpak and A. Minten.

Although, as also previously mentioned, experimental work in this region may be hampered by interference, or even stopped, during the assembly and installation of the large magnet, it seems probable that some data ~~may~~ may be obtainable during this period in addition to the testing of the equipment to be used inside the magnet.

It is premature to discuss, in detail, proposals for experiments that will require this magnet but proposals that include work that could be done in this region during this early stage have been made by the following:

1. Munich-CERN-Princeton collaboration (ISRC/69-8 and Add.).
2. CERN-Hamburg-Orsay-Vienna Collaboration (ISRC/69-14).

G. Charpak was asked to convene members of these groups to explore this situation, together with the needs for testing the detection apparatus to be put in the split-field magnet, and a plan for this region should be prepared for submission to the Committee. F. Bonaudi and L. Resegotti should also be consulted in this planning.

(c) <u>Interaction Region 6</u> see Cocconi, then Strolin -

Some preliminary explorations have shown that it may be possible to set up, at this region, the experiments on Elastic Scattering and Total Cross Section, proposed by the following:

1. Pisa Group (ISRC/69-12).
2. CERN-Genova-Torino Collaboration (ISRC/69-19 and Add.).
3. Rome-CERN Collaboration (ISRC/69-20 and Add.). (Amaldi will be at CERN ~ 24 June -

It will not be possible for all three of these groups to carry out their experiments simultaneously in this region but there are possibilities that two at a time could work there together.

G. Cocconi and F. Bonaudi were asked to explore compatibility questions with these groups in order that a plan can be presented to the Committee.

4. The Large Magnetic Analysis System

A. Minten reported that, following the suggestion made at the previous meeting, he and G. Charpak have circulated a memorandum (Ref: D.Ph.II/AM/dmh - date: 27.5.69) to the European High Energy Physics Groups outlining the discussions being held by the Working Group concerning the split-field magnet and its possible detection systems and inviting wider participation in this work.

Two further meetings have been held since his previous report to the Committee, one on the progress in technology of proportional chambers and the other on technical problems connected with the design of the magnet.

L. Resegotti described some of the problems of the magnet's design which are now under study, especially structural questions. Although it is desirable to have considerable flexibility and minimum interference with the experimental use, the structure must represent a compromise between these aspects and the complexity of the mechanical design, costs and efficiency.

5. Other Magnets

In addition to the large split-field magnet, there will be needs for other magnets to provide complementary and supplementary functions. A full consideration of these needs and how they may best be served must be postponed by the Committee until the initial phase of the experimental programme is more clearly defined. However, two magnets have been proposed by experimental teams and their possible use in this connection has been discussed.

(a) Magnet proposed by the Scandinavian Collaboration.

The Committee has already expressed interest in this magnet (minutes of the third meeting of the ISRC, ISRC/69-21). At this time, it asks the Scandinavian group to examine the possibilities for use of this magnet in a wider scope than that of their original proposal, what features of the magnet would make it valuable as a general-purpose facility, and to compare it with other designs (for example, a central-field magnet) in providing complementary use with the split-field magnet. For the present, it would not be planned to install this magnet for the earliest stage of experimentation at the ISR.

(b) Magnet proposed by the Princeton Group.

Although this magnet exhibits some interesting features, the Committee has decided, on the basis of a broad range of considerations, that it cannot accept this piece of equipment at this time.

6. Future Meetings

The next (closed) meeting of the ISRC will be held on 3 July, at 9 a.m.

If it is necessary to hold another meeting of the Committee during the summer, tentative dates are 14 August, at 2.30 p.m. and 15 August at 9 a.m.