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CERN/ISRC/73-15

Mr. Franco BONAUDI

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EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

DRAFT MINUTES OF THE THIRTY-SEVENTH MEETING  
OF THE INTERSECTING STORAGE RINGS COMMITTEE

HELD ON 22 MAY, 1973

Present: H. Schopper (Chairman), M. Banner, G. Bellettini, M. H. Blewett, F. Bonaudi, G. von Dardel, L. Di Lella, K. Hübner, M. Jacob, W. Jentschke (part time), K. Johnsen, F. Muller, E. Picasso, J. Prentki (part time), N. Schmitz, J. Steinberger, K. Tittel (part time), A. M. Wetherell, E. Zavattini.

Since the last meeting, the ISRC has received the following documents:

- Request for Permission to Add Equipment for Measuring  $\sigma_T$  in a Way Free from Any Luminosity Measurement, by the Pisa-Stony Brook collaboration, R 801, CERN/ISRC/69-12 Add. 5.
- Observation of the Luminescence in the Visible Region of the Circulating Proton Beam at the ISR, by the R 602 collaboration and E. Jones (ISR), CERN/ISRC/69-19 Add. 9.
- Progress Report II on the Development of a Method to Detect Fractional Charges in Water, by G. von Dardel, S. Henning, G. Malmenryd, Lund University, CERN/ISRC/70-33 Add. 2.
- Revisions of the "Proposal for a Large  $4\pi$ -Detector to Investigate Multibody Events at the ISR", by the Aachen-CERN-Harvard-Genova-Munich collaboration, CERN/ISRC/72-32 Add. 2.
- Addendum to the Proposal to Search for the Neutral Heavy Boson  $Z^0$ , by U. J. Becker, et al., M.I.T., CERN/ISRC/73-9 Add. 1.
- A Proposal to Study the Inclusive Particle Production at Very Low  $P_t$  and  $x = 0$ , by the British-Scandinavian collaboration and M.I.T., CERN/ISRC/73-11.
- Proposal for a Continuation with Increased Sensitivity of the Search for  $e^\pm$ ,  $e^+e^-$  Pairs, High Transverse Momentum  $\pi^\pm$ , and Multiple Pion Correlations in Collisions with High Transverse Momentum, by the CERN-Columbia-Rockefeller collaboration, CERN/ISRC/73-13.

- Memorandum on Results of Total Cross-Section Measurements Independent of the Van der Meer Method, by the CERN-Rome collaboration and Pisa-Stony Brook collaboration, CERN/ISRC/73-14.

1. The Draft Minutes of the thirty sixth meeting of the ISRC were approved.

2. Status Report on the ISR and the Experimental Programme

(a) The ISR Co-ordinator, L. Di Lella, reported on the performance of the ISR during physics runs which have taken place since the last meeting of the ISRC, on the duration and energies of these physics runs, and on the progress in the experimental programme, mentioning that R 202 is now completed. The Committee was pleased to hear of the continued improvement in the performance of the ISR. Di Lella also outlined the schedule of time and energies planned for the period after the present one-month shutdown of the ISR for the installation of the SFM facility.

(b) An outline of the schedule for ISR experiments for the rest of 1973 was presented by Di Lella, based on the information given by the groups at the Open Session of the last ISRC meeting. If, during the coming months, any of these groups which indicated that their experiment would be over by or before the end of this year find that a longer stay is necessary, they should inform the ISRC giving a new estimate for approval.

(c) Di Lella also described some tests that have been made, by the group of Experiment R 602 and the ISR Department, on observation of luminescence generated by atomic de-excitation of residual gas after collisions with the circulating ISR beams, in order to determine beam profiles with the aim of obtaining better measurements of luminosity.

The Committee took note of the paper describing the method and tests, Observation of the Luminescence in the Visible Region of the Circulating Proton Beam at the ISR, by R 602 collaboration and E. Jones (CERN/ISRC/69-19 Add. 9), but stressed that these tests should not perturb any of the experiments in the presently approved ISR programme. The Committee also agreed that tests of this method should not have priority over any other developments that might lead to improved measurements of luminosity.

3. Status Report on the Split-Field Magnet Facility

The SFM Co-ordinator, K. Tittel, reported that the split-field magnet will start to be moved into intersection I-4 at the end of this week. The special vacuum chamber has been installed inside the magnet. The manufacture and assembly of this thin-walled (0.7 mm thick) complex structure represents the extreme of present technology and tests had shown the need for some reinforcement at alternate convolutions of the

chamber walls. Tittel felt that these reinforcements would not be harmful to the SFM experiments.

All parts of the SFM detector system appear to be on schedule. Several of the "forward-detector" chambers had been installed during the past months at I-4 for testing but the high background at this intersection from beams in Ring 2 had seriously hampered these tests and had made the vacuum chamber there radioactive. The ISR Department has been searching for the cause of this background. The Committee suggests, if the problem still persists after the ISR start operation again, that the beams in Ring 2 be limited so that they do not give rise to such high backgrounds, and that care be taken not to contaminate the new vacuum chamber.

#### 4. Items Pending from the Last Meeting

- (a) On the paper, Further Investigations on Elastic Scattering and Diffraction Excitation at the ISR, by the Aachen-CERN-Harvard-Genova-Munich collaboration (CERN/ISRC/69-19 Add. 8), the Committee took note that the Memorandum on Revisions of the Proposal for a Large  $4\pi$ -Detector to Investigate Multibody Events at the ISR, by the same collaboration (CERN/ISRC/72-32 Add. 2), contained further information on the work proposed by this group and discussed both of these papers. The conclusions of the ISRC were as follows.
- (i) Experiment R 602 will be continuing its investigations of elastic scattering, including measurements of total cross section, at intersection I-6, with detectors that are now starting to be installed. However, the Committee understands that the proposed extension of the measurements to smaller angles is withdrawn.
  - (ii) When the double-magnet spectrometer is installed, the approved Experiment R 603 will begin, in parallel with the continuation of R 602.
  - (iii) The addition of a calorimeter on the side of intersection I-6 opposite the double magnet (referred to by the authors as Experiment R 602.5) is a new proposal and the Committee requests a more detailed description of the physics and apparatus before further action can be taken.
  - (iv) The proposal to shift the double magnet to the centre of the intersection with a calorimeter on each side is also a new proposal and the Committee awaits the promised comprehensive document.
  - (v) It is understood that the proposal for a large  $4\pi$ -detector, as described in CERN/ISRC/72-32, is withdrawn.

- (b) On the Proposal to Study Large Transverse Momentum Events Using the Split-Field Magnet Detector by the Aachen-CERN-Munich collaboration (CERN/ISRC/72-30 Add. 2), the Committee requests the group to present this proposal at the Open Session of its June meeting.
- (c) On the Revised Proposal for a Search for Multigamma Events at the ISR, by the Brookhaven-Grumman-Rome collaboration (CERN/ISRC/73-7 and /73-7 Add. 1), the Committee requests the group to present a report on the results of its test Experiment R 104T at the Open Session of the June meeting of the ISRC.
- (d) On the Proposal to Search for the Neutral Heavy Boson  $Z^0$ , by U. J. Becker, et al., M.I.T. (CERN/ISRC/73-9 and /73-9 Add. 1), the Committee requests the group to present this proposal at the Open Session of its July meeting.

#### 5. Newly Received Proposals

- (a) The Committee took note of the Proposal to Study Inclusive Particle Production at Very Low  $P_{\perp}$  and  $x = 0$ , by the British-Scandinavian collaboration and M.I.T. (CERN/ISRC/73-11), and requests the group to present this proposal at the Open Session of its June meeting.
- (b) The Committee took note of the Proposal for a Continuation with Increased Sensitivity of the Search for  $e^{\pm}$ ,  $e^+e^-$  Pairs, High Transverse Momentum  $\pi^{\pm 0}$ , and Multiple Pion Correlations in Collisions with High Transverse Momentum, by the CERN-Columbia-Rockefeller collaboration (CERN/ISRC/73-13) and requests the group to present this proposal at the Open Session of its July meeting.
- (c) The Committee took note of the Request for Permission to Add Equipment for Measuring  $\sigma_T$  in a Way Free from any Luminosity Measurement, by the Pisa-Stony Brook collaboration, R 801, (CERN/ISRC/69-12 Add. 5) but has not had time to read this document.
- (d) The Committee took note of the Memorandum on Results of Total Cross-Section Measurements Independent of the Van der Meer Method, by the CERN-Rome collaboration and the Pisa-Stony Brook collaboration (CERN/ISRC/73-14) but has not had time to read this document. The ISRC was told that the paper is for information and does not request further action.

6. Other Business

A progress report was presented to the Committee by G. von Dardel on the work being carried out for the proposal for A Search for Fractionally Charged Particles in Water Irradiated at the ISR, by G. von Dardel and S. Henning, University of Lund (CERN/ISRC/70-33 and /70-33 Add. 1). A summary of this work (CERN/ISRC/70-33 Add. 2) was distributed at the meeting.

The Committee expressed its continued interest and agreed to leave this proposal pending.

7. Next Meetings

The next meeting of the ISRC will be held on Tuesday, 12 June, 1973 with an Open Session in the morning in the CERN Council Chamber and a Closed Session in the afternoon in the ISR Conference Room.

The following meeting of the ISRC is scheduled for Tuesday, 10 July, 1973.

M. H. Blewett