

REPORT ON THE FERMILAB PROGRAM ADVISORY COMMITTEE MEETING

E. L. Goldwasser

The Fermilab Program Advisory Committee met for its annual autumn meeting on November 11-12. That meeting was preceded by a two-day Proposal Presentation Meeting which was held on October 14-15.

It remains our general plan, with regard to advice on the Laboratory's research program, to work out the main features of the program during an extended annual summer meeting with our Program Advisory Committee. Additional meetings, which are held during the remainder of the year, are principally for the purpose of tying up loose ends remaining after the summer meeting and for the purpose of considering timely problems which may appear on a short term basis.

At the recent meeting about 15 individual new proposals were given some consideration. As a result of our discussions, approvals were given for 4 experiments, 4 proposals were rejected, and consideration of 7 additional proposals was further deferred.

One major problem to which we turned our attention was the program of neutrino experiments. As a result of our discussions, E-310, an experiment of the Fermilab-Harvard-Pennsylvania-Rutgers-Wisconsin group, which had previously been approved only for operation with the double focusing horns, was approved for a run during the month of December with the quadrupole triplet and a 1-millisecond spill of protons on the neutrino target. The use of the quadrupole triplet suppresses the low energy events which predominate in the data obtained with electronic detection equipment

when it is used with the focusing horns. Thus this new run should give a great deal of valuable information on high-energy neutrino interactions, presumably involving a large number of dimuon events and presumably also containing valuable new data in the region of the suspected high- y anomaly.

The scheduling of the quadrupole triplet for a neutrino run will delay the previously scheduled neutrino and antineutrino bombardments of the 15-ft bubble chamber by a corresponding interval. Following the completion of that run we expect to turn to those experiments.

With the scheduling of E-310 to run with a neutrino beam generated by the quadrupole triplet, it also becomes possible to run the 15-ft bubble chamber simultaneously with the quadrupole triplet beam. No approvals had as yet been given for bubble chamber runs with the quadrupole triplet, but two proposals had been submitted: one, P-460, using a heavy neon mix, and another, P-520, using a light neon mix. A careful study of the logistics of the liquid neon supply indicated that it would not be possible to run a light neon mix just prior to the runs with a heavy neon mix. We have therefore focused our attention on P-460, the proposal for use of the heavy neon mix with the quadrupole triplet beam. That proposal also involves the rearrangement of the EMI so as to give deep coverage in a narrow forward cone and less broad coverage at wider angles. The deep central coverage means a much more positive muon identification in that region, using a double layered EMI with additional hadron absorber. We are now working to prepare for the rearrangement of the EMI so that E-460 can be run simultaneously with E-310. The main purpose of E-460 will be to study, using

the techniques available with the bubble chamber and a highly selective EMI, the dimuon interactions which have previously been observed to occur in the data obtained in the experiments which preceded E-310.

In another discussion at the recent meeting it was noted that the first hadron jet experiments that were scheduled during a hadron jet workshop in 1973 are now in an advanced stage of development and operation. It was also noted that a number of new proposals are beginning to surface, designed to explore in some detail the production dynamics and the structure of hadron jets. It seems appropriate before reaching any decisions on new hadron jet proposals to survey the information that should be forthcoming from the present generation of experiments and to take a broad look at all of the new proposals designed to look more deeply into hadron jet phenomena. We therefore intend to schedule a workshop on hadron jets sometime in 1977. It is our tentative plan to hold such a workshop in the month of April or May. All experimenters who feel they may be interested in new jet experiments should collect their thoughts and their proposals on a time scale corresponding to that kind of a workshop schedule.

Another workshop which we are tentatively planning to schedule this spring would be concerned with major new neutrino experiments. During the recent presentation of E-310 the proponents re-emphasized their agreement with the Laboratory's policy that the equipment they have put together for that experiment is available as a Laboratory facility. Several new groups have indicated an interest in undertaking studies of neutrino interactions. Some of those studies would require large detectors, and several

ideas have been proposed for detectors which would be entirely different from those which exist today. Plans of this kind are usually discussed at the summer meeting of the Program Advisory Committee. The workshop on neutrino experiments would be held preparatory to the summer PAC meeting in 1977. At that workshop we shall invite presentations of proposals addressed to new neutrino experiments and facilities.

A completely different type of subject was discussed at the recent PAC meeting. Some questions were raised about the difference in procedures that apply to proposals which are presented at our special proposal presentation meetings, such as the one we had in October, and the procedures which are used for proposals which are sometimes presented for the first time before meetings of our full Program Advisory Committee. We have now decided to try to normalize those two sets of procedures, insofar as possible.

Thus, the next meeting of our Program Advisory Committee which will occur in March will be proceeded, as is now standard, by a proposal presentation meeting which is scheduled for February 10-11, 1977. That meeting, like its predecessors, will be an open meeting with all interested physicists encouraged to attend and to participate in the discussions. Furthermore, when we meet in March with our Program Advisory Committee, we will attempt to structure the meeting so that the first portion of the meeting will be held in the Curia II seminar room and will be open to all interested physicists. That interval of time will be devoted to the presentations of any proposals that, for one reason or another, could not be heard in February. Following the hearing of those presentations, the committee will go into the usual closed session.
