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TC/MFL/dmh

CM-P00053612

12th June 1967

To: Members of the Electronics Experiments Committee.

From: C. Bricman, M. Ferro-Luzzi, J.M. Perreau, J. Seguinot,
Y. Desclais and G. Valladas.

Re.: Authorization for a test of the $K^-p \rightarrow \bar{K}^0n$ cross section
experiment in the m_4 beam.

In connection with our proposal to measure the $K^-p \rightarrow \bar{K}^0n$ partial cross section (Nov.28, 1966 and Feb.2, 1967) we would like to test our apparatus at the PS, sometime before the 1968 shut-down.

The apparatus will be ready by the end of this Summer and preliminary tests will be performed in Saclay using a pion beam. A parasitic run on the m_4 beam, behind the $\Xi \rightarrow \beta$ set-up^(*), would then be very useful for testing the performances of the apparatus in real-life conditions. The advantages of an "in loco" trial of an equipment several months before the actual use are perhaps too obvious to need stressing: it will be possible to investigate biases, detection efficiency, realistic estimate of the running time, optimization of the counters-target configuration, and all the other experimental details which are frequently responsible for the success of an experiment. In particular, the running-in time necessary when our experiment will eventually be scheduled as prime-user can be expected to be considerably reduced.

We have assured ourselves that whatever is left of the beam after passing through the $\Xi \rightarrow \beta$ apparatus is still good enough for our testing purposes. As for space requirements, the whole of our electronics will be contained inside a ~ 7.5 m x 2.5 m trailer and does not need to occupy more than this surface. We do not plan to use liquid hydrogen as a target during the test, thus the area needed for the target and the counters surrounding it is reduced to a minimum of ~ 2.5 m x 2.5 m. We have estimated that the total space necessary for our equipment can be

accommodated in the area assigned presently to the kaon branch of the n_4 beam, without giving too much trouble to the $\Xi \rightarrow \beta$ group^(**). It should be noticed that the high mobility of our equipment makes it relatively easy to displace or rearrange it within short notice and according to possible unforeseen needs of the beam's prime user. The power requirement will be of ~ 15 KW.

We could start moving in our equipment by the beginning of November 1967.

(*) We have considered the alternative possibility of installing our apparatus at the end of the pion branch of the n_4 beam. However, apart from the problems relative to the space availability in this area, it appears that the K-flux reaching this location, together with the high π/K ratio, is much too unfavourable even for a simple test. On the contrary, the solution we propose offers the notable advantage that our test could be easily transformed into a production run in an emergency case where, for some reason or another, the beam would otherwise be left idle.

(**) This point has been discussed together with Soergel.