CERN / EEC - 75 / 32

Date: 26.5.1975

Ref.: NP/GCh/tr

M E M O R A N D U M

Copy to/Copie à:

To/A : EEC

From/De : G. Charpak and F. Sauli

Subject/: Request for a PS beam
Objet

In the last two years we have undertaken several experiments on a parasite beam in the West Hall.

We should like to follow several lines of research which seem promising to us.

1. Development of the scintillating drift chamber.

This chamber localises particles like a drift chamber but stands fluxes at least 100 times higher than the proportional chambers. For SPS experiments it is probably a good tool for all the beam counters.

2. Channelling in crystals.

This experiment is done in collaboration with a laboratory from Aarus, Denmark. The first results are very promising. It would require a flexible beam: positive and negative particles, variable energies.

3. Radiography of living objects with proton beams.

An accuracy of 1 mm^3 has been obtained in our last run, which means 100 times better than with modern X-ray scanning machines. We need a good intense achromatic beam to finalise the method.

All these experiments require the same equipment which is now running well: planes of high accuracy drift chambers with the attached electronics.

An ideal beam would be Q 12 in the South Hall (maximum energy: 4 GeV). Since we would have to stay in a stable position for a long time, we understand that this beam is a test beam with heavy commitments. For this reason we request the possibility to use or make a beam with characteristics similar to the Q 12 beam (positive and negative, intense: 10^5 to 16^6/sec., achromatic, easy to focus on a small surface).

Encl.

Reprints of the three articles describing the preliminary results of these lines of research.