

NP/Memo/538

11 November, 1963

To : Professor P. Preiswerk, Chairman of the E.E.C.
 From : Group 863 (*Mermod et al*)
 Re : Status of $\pi + d \rightarrow p + p$ experiment

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1) Experimental Set-up

The experimental set-up is, as described in the first proposal, to detect both protons, in coincidence with the incident pion, in two large scintillators which accept corresponding solid angles. This is done together for six different angles spread over the total angular range (0 - 90° in c.m.).

At the two smallest angles the $\pi^+ + p \rightarrow \pi^+ + p$ backward scattering gives angular correlation comparable to those in the reaction $\pi + d \rightarrow p + p$. Although the time of flight between the backward π and the backward proton in both reactions is different by 12 ns, we have added a range counter which will very much improve the rejection against the backward pion.

All other background has been estimated to be very small, and will be measured during the experiment, by displaying the time of flight for each 6 channels on a kicksorter through 6 time converters.

2) Equipment

The scintillators which are the main part of the equipment have been ordered and will be ready by middle of December.

The deuterium target exists and is being modified for our use. Deuterium is available at CERN. All the electronic equipment exists. We have investigated the possibility of performing this experiment in the α beam. This is feasible with minor modification of this beam.

This experiment will be ready to run at the end of December.

R. Mermod

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