To: Physics III Committee

From: H. Hilscher, K. Krebs, G. Sepp and V. Soergel

Re: Experiment SC5

In the test measurements done up to now, we found the cross-section for the reaction

\[ \pi^+ + ^{12}\text{C} \rightarrow \pi^0 + ^{12}\text{N} \]

to be \((150 \pm 30) \mu \text{b}\) at 80 MeV \(\pi^+\) energy.

This cross-section is high enough to allow a precise comparison of the cross-sections for the reactions

\[ \pi^+ + ^{12}\text{C} \rightarrow \pi^0 + ^{12}\text{N} \text{ and } \pi^- + ^{12}\text{C} \rightarrow \pi^0 + ^{12}\text{B}, \]

which is the purpose of the experiment.

We ask therefore for the experiment to be approved by the NPRC.

We would like to get about 15 shifts before the shut-down of the SC in April, and 30 shifts in the period from May to September 1968. This machine time will allow us to measure the energy dependence of the cross-section and to do the comparison at a suitable energy.