

Ref.: KW/fn

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M E M O R A N D U M

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To/A : Members of the SPSC

From/De : CERN-Hamburg-Amsterdam-Rome-Moscow Collaboration (WA18)

Subject/Objet : Request for antineutrino running in the broad band beam during 1979/80

It is one of the aims of our experiment to study neutrino-electron scattering using the horn focussed broad band beam. We expect the following event numbers, assuming the validity of the Weinberg-Salam model and $\sin^2\theta = 0.23$,

$$\begin{array}{ll} \nu_{\mu} e^{-} \rightarrow \nu_{\mu} e^{-} & 70 \text{ events per } 10^{18} \text{ protons} \\ \bar{\nu}_{\mu} e^{-} \rightarrow \bar{\nu}_{\mu} e^{-} & 25 \text{ events per } 10^{18} \text{ protons} \end{array}$$

The best physics would therefore be obtained if the relative amounts of protons for ν and $\bar{\nu}$ runs were one to two. We have a preference for early antineutrino running in period 3 to obtain the first result on $\bar{\nu}_{\mu} e$ scattering for which only limits exist at present at high energy.

This antineutrino run would also allow, in collaboration with WA1, a significant increase of statistics for measurements of the polarization of μ^{+} .

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