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M E M O R A N D U M

To: Members of the SPSC  
From: CHARM Collaboration  
Subject: SPS energy for WBB running

The SPS schedule for 1983 foresees WBB runs during periods P4 and P5.

We have previously asked for 400 GeV proton energy for these runs. It is our aim to obtain 100 events of  $\nu_{\mu} e$  and  $\bar{\nu}_{\mu} e$  elastic scattering, respectively. Using the upgraded CHARM neutrino detector we expect an improved angular resolution and consequently a factor  $\sim 2$  less background. If the WBB is run with 450 GeV protons additional collimation of the secondaries down to 3 mrad would be required to avoid leakage of muons through the shielding, reducing the total event rate of our experiment by a factor  $\sim 2$ , which would be unacceptable to us.

We would also like to have the steel window of the decay tunnel replaced by a titanium window (gain  $\sim 25\%$ ).

There may be a way to continue 400 GeV running for the WBB and 450 GeV for the other SPS program by ejecting 400 GeV protons either during acceleration, before the flat top, or, after some deceleration, on the falling slope of the magnet cycle. This scheme should be tested during period 3.