NOTE CONCERNING THE INSTALLATION OF A PROTOTYPE BEAM TRANSFORMER AND BEAM PROFILE MONITOR IN THE K 11 LINE

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1. INTRODUCTION

A beam profile monitor (BPM) and beam transformer (BT) are planned for installation at Serpukhov. These apparatuses should be tested at CERN, however, in order to be certain that they function properly. We thank Mr. B. Langeseth for his willingness to consider the temporary installation of the prototypes in the K 11 line. This note considers some of the details of the installation.

2. THE BEAM-PROFILE MONITOR

This monitor has to be mounted somewhere on the beam in the neutrino tunnel. The installation would be easier, if we could mount the BPM in one of the standard luminescent screen boxes.

The simplest and safest way would be to leave the BPM permanently in the beam during a complete run. The BPM consists of 16 Al foils(1,5 mm wide and 2,5 mm apart) of thickness 20 μ. This is equivalent to about 5 cm of air at atmospheric pressure and should not disturb the beam. The alternative is constructing a BPM that can be switched in and out of the beam.

The cables needed for the BPM and associated electronics are :

a) 220 V mains supply (0,5 A)

b) a 28-wire multicore cable coming from SS77. We can pose this cable under your guidance.

3. THE BEAM TRANSFORMER

A new housing will be made for the BT with an internal opening of 60 mm. This transformer can not affect the ejected beam and we propose to mount it inside the PS ring around the same glass tube as the Bertholotto transformer. It would be fixed on the iron support by our means. The only manipulation necessary on the beam transport is the removal and remounting of the glass tube.

4. QUESTIONS TO BE DECIDED UPON

1. Can the beam transformer be mounted on the glass tube inside the PS ring ?
2. Where can the BPM be installed and when ?
3. Can we borrow (for about 6 months) one of your luminescent screen boxes ?
4. Moving or stationary BPM ?
5. Posing of the multicore and 220 V cables.