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M E M O R A N D U M

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To/A : A. Astbury, Chairman PSC

From/De : E. Gabathuler, European Muon Collaboration

Subject/Objet : A high intensity beam of variable flux ( $10^3$ - $10^5$  particles/mm<sup>2</sup>) to test muon beam hodoscopes, beam proportional chambers, dead regions in large area proportional and drift chambers.

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Following our discussions on the availability of high intensity test beams in 1977, I wish to submit a formal request to the PSC to use a high intensity beam of intensity  $10^3 - 10^5$  particles/mm<sup>2</sup> of dimensions up to 10cm diameter, to simulate the planned SPS muon beam. At present we are testing some small beam chambers in the C 9 external proton beam, and wish to continue this work through spring/summer 1977. In addition it is necessary to check thoroughly preliminary figures of  $\leq 10^{-3}$  for inefficiencies measured in dead regions in the centre of large proportional and drift chambers. Here the beam will be traversing the dead region and the efficiency of single particles will be measured in the boundary region. These chambers will be transparent but main user time will be required to achieve the necessary intensity variation. One further point of information is that a free space of 8m (horiz.) x 5m (vertical) will be required in the area due to the large size of chambers varying in active dimensions from 5 x 2.0m<sup>2</sup> to 4.5 x 3.7m<sup>2</sup> and a beam height above the floor of 2.5m. Presumably this can be achieved using a vertical dog-leg of 2 magnets, but will require special safety and beam-stopper considerations.

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