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ADDENDUM TO THE PROPOSAL ON MEASUREMENTS OF THE INFLUENCE OF CHANNELING ON ATOMIC AND NUCLEAR REACTION YIELD

At the 28th Research Board meeting held on October 18, 1978 this experiment was approved for a South Hall test and an East Hall beam to be used for the full experiment. This beam would be allocated later.

The present status is that the whole experimental set-up is built and being installed in the test beam (d_{31}). The first test run will start on 18 April and end on 3 June. A second test in August might be needed.

Concerning the East Hall beam, we are now in a position to be able to specify our requirements in detail. As channeling angles in the GeV-region are small (0.1 - 1.0 mrad) these experiments require beams with a high intensity ($\sim 10^5$ particles/burst) within a small beam cone - around 2 mrad. This beam divergence makes it possible without tilting the target, to scan outside the channeling region in order to have random reference measurements. Due to the fact that the targets are intrinsic solid state detectors with active areas around 6 mm in diameter the beam spot should be small (5-10 mm). The momentum resolution is not critical ($\Delta p/p \sim 5\%$). As shown in the proposal, a target area of around 20 m is needed to give angular resolution down to ~ 20 μrad. After discussions with L. Hoffmann and the former PS Coordinator J.Perreau, the beam p_{17} seems to be ideal. In fact computer calculations made by M. Ferro-Luzzi on this beam show that the central beam spot is around 6 mm with a beam intensity of 10^5-10^6 inside 2 mrad. This seems to be ideal for channeling experiments. The only modification needed is an elongation of the target area.

This beam is allocated to experiments S153 and S157 until mid-summer without any further request, as can be seen from the PS Draft Schedule for 1979. Using this beam our estimated running time would be around four PS periods. For us periods 5 and 6 would be ideal to start with because this would give us a chance to have an extra test run. A delay until 1980 would be rather problematic for the meson-channeling group since most of the Aarhus group will be working at CERN during 1979.

On behalf of the meson-channeling group,
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