

ELEMENT DISTRIBUTION AND MULTIPLICITY OF HEAVY FRAGMENTS

MPI Heidelberg and GSI Darmstadt

P.Doll², A.Gobbi², K.D.Hildenbrand², W.Kühn¹, U.Lynen¹, A.Olmi¹,
G.Rosner¹, H.Sann², H.Stelzer² and J.P.Wurm¹

The proposed experiment measures the energy and angular distribution of heavy fragments produced in the reactions of ^{12}C on several targets between ^{27}Al and ^{238}U at 86 Mev/u. The systematic investigation of a highly excited interaction region (fireball) by means of a clean N and Z identification of heavy target fragments, may result in a better understanding of temperature concept and of the degree of equilibration of the local interaction region with respect to the total system. For this investigation a large-area position sensitive ionization chamber of 50 msr solid angle in conjunction with a time-of-flight telescope consisting of parallel-plate detectors will be used. In order to get information on the transverse momentum transfer and the inelasticity of the collision, the energy of the projectile-fragments will be measured at forward angles with a plastic scintillator hodoscope. In addition to this inclusive measurement correlations between heavy fragments will be investigated by means of three position sensitive parallel plate detectors covering a solid angle of 2π . In order to study the dependence of the observed fragments on the primary N/Z ratio, targets of $^{112,118,124}\text{Sn}$ will also be used.

1) MPI für Kernphysik, D - 6900 Heidelberg, West Germany

2) GSI, D - 6100 Darmstadt, West Germany

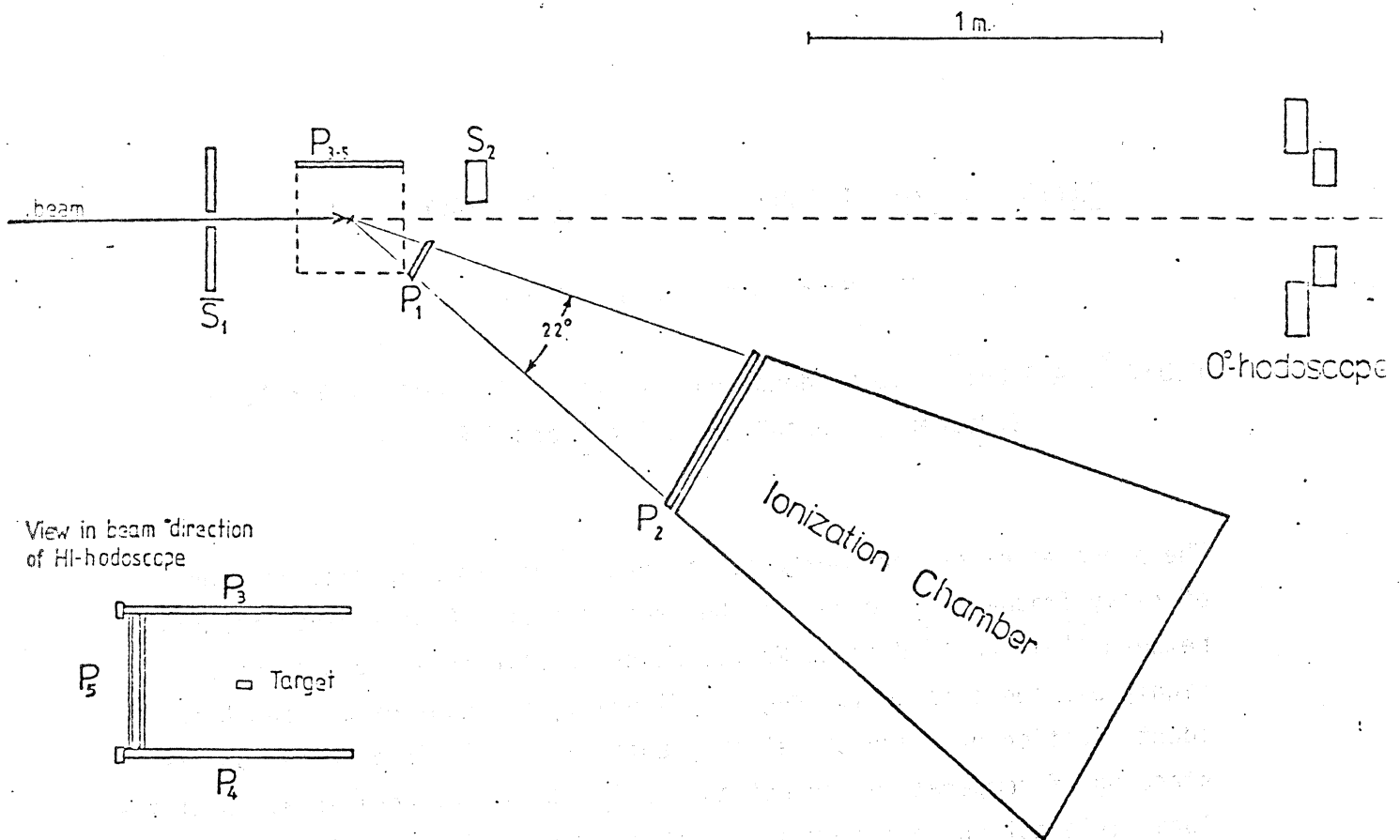


Fig 1: Experimental setup of the detectors. The scattering chamber and the other parts of the vacuum system are not shown. P_1 and P_2 form a time-of-flight telescope in front of the ionisation chamber. $P_3 - P_5$ are position sensitive parallel-plate detectors used as heavy ion hodoscope. The O^0 -hodoscope together with S_2 are plastic scintillators. S_1 is used to veto particles in the halo.