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THE SACLAY SPECTROMETER SPES II

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A magnetic spectrometer with large solid angle (2.10^{-2} sr) and momentum acceptance (± 18 %) has been built in Saclay to carry out a range of experiments with low counting rate. It is designed to be able to work at 0° with the Saturne proton beam and to analyse particles with positive or negative charge.

The magnet is of QDD, energy loss type with central momentum 700 MeV/c. The trigger and the multiwire interpolation chambers allow to detect two particles simultaneously on the focal plane, so that in addition to (p,π^+) and (p,π^-) we can also study $(p,p\pi^+)$ or (p,pK^+) reactions at 0° on various targets.

We have obtained up to now an intrinsic spatial resolution better than 0.8 mm for the chambers and a time resolution better than 1 ns FWHM for the coincidence between the two particles detected all along the focal plane.

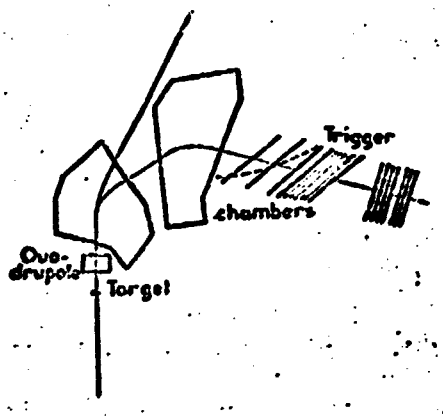

Figure 1 is a general layout of the spectrometer and figure 2 shows a spectrum obtained for the two body reaction $p + d \rightarrow \pi^+ + t$ at 700 MeV incident energy in which case the pion and the triton are within the momentum acceptance of the spectrometer. The energy resolution for the pion peak is 600 keV.

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fig. 1

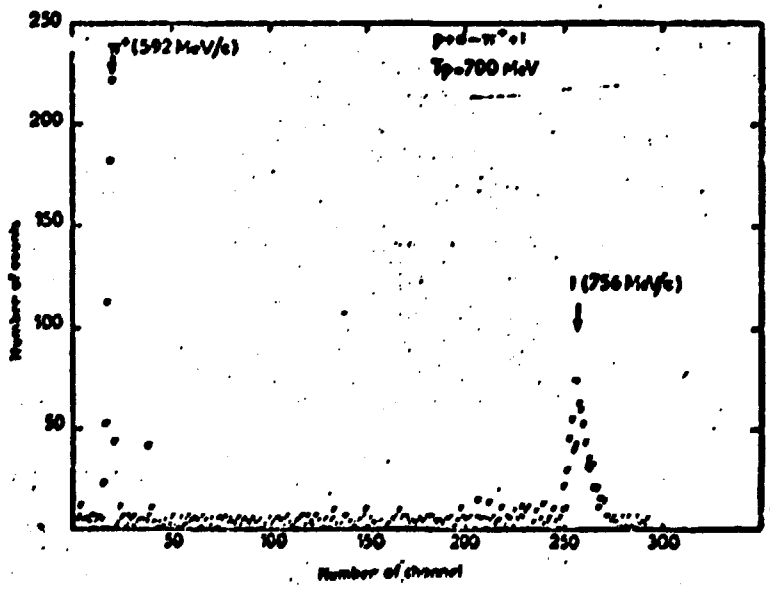

fig. 2