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MEASUREMENT OF $\bar{p}p$ CROSS SECTIONS AT LOW $\bar{p}$ MOMENTA

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The measurement of $\bar{p}p$ cross sections (integrated and differential elastic, charge exchange and annihilation cross sections) at very low momenta (150 MeV/c $\lesssim \bar{p} \lesssim$ 500 MeV/c) are proposed. The measurement of the spin averaged real and imaginary scattering lengths, as well as the forward scattering amplitudes will be derived.

The elastic cross sections are measured by a multi wire proportional chamber and a scintillator hodoscope placed in a scattering chamber under vacuum. The charge exchange cross section is measured by a ring of 18 calorimeter modules covering a solid angle of 1.5 sr. The annihilation cross section will be determined by a calorimeter box surrounding the target. To cope with the low $\bar{p}$ momenta a liquid hydrogen target of 2 mm thickness will be developed.

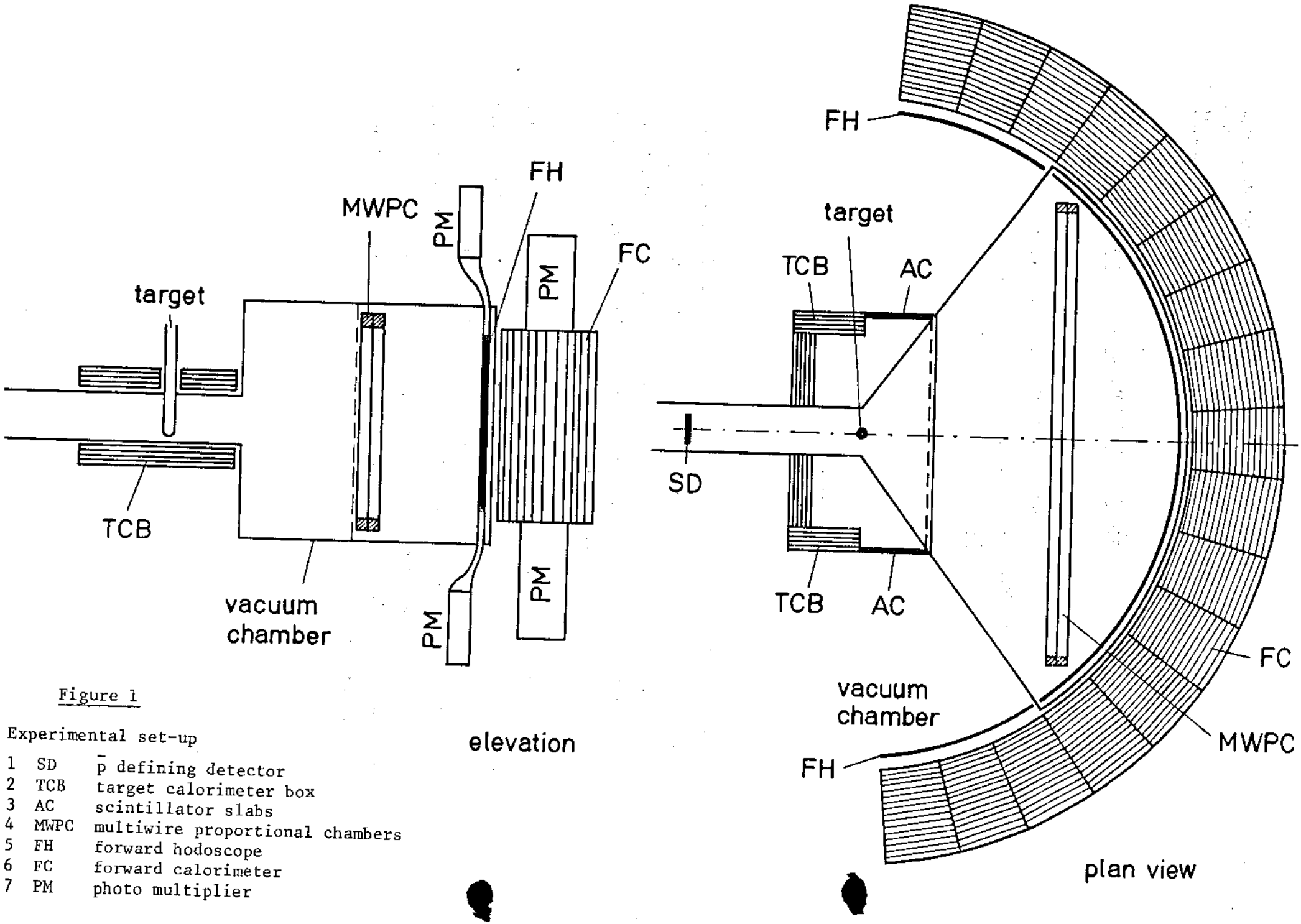

Figure 1

Experimental set-up

1	SD	$\bar{p}$ defining detector
2	TCB	target calorimeter box
3	AC	scintillator slabs
4	MWPC	multiwire proportional chambers
5	FH	forward hodoscope
6	FC	forward calorimeter
7	PM	photo multiplier