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4 February 1977HIGH PRECISION MEASUREMENT OF π^-p TOTAL CROSS SECTIONCERN¹-Collège de France²-Ecole Polytechnique Paris³ Collaboration

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This experiment is an addition to the CERN-CDF experiment S153^(*), aiming to measure with a high momentum resolution $\sim 0.1\%$ and a good statistical accuracy $\sim 0.1\%$ the total cross section of the π^-p scattering, in the 5-15 GeV/c momentum range. This measurement yields a complementary information on the possible existence and the nature of narrow baryon states in the 3.2 to 5.4 GeV mass range. It allows also to detect N^* and Δ Regge recurrences. Part of the existing apparatus is used in parallel with the S153 experiment. Proportional chambers acting as a transmission hodoscope are added on the beam line after the target. A data flow of ~ 40 Megabit/s originated in wire chambers, is processed on-line and the events are histogrammed by the fast micro-computer developed at Ecole Polytechnique.

(*) Cf. proposal to the EEC, CERN/EEC 76-6 (28 January 1976).

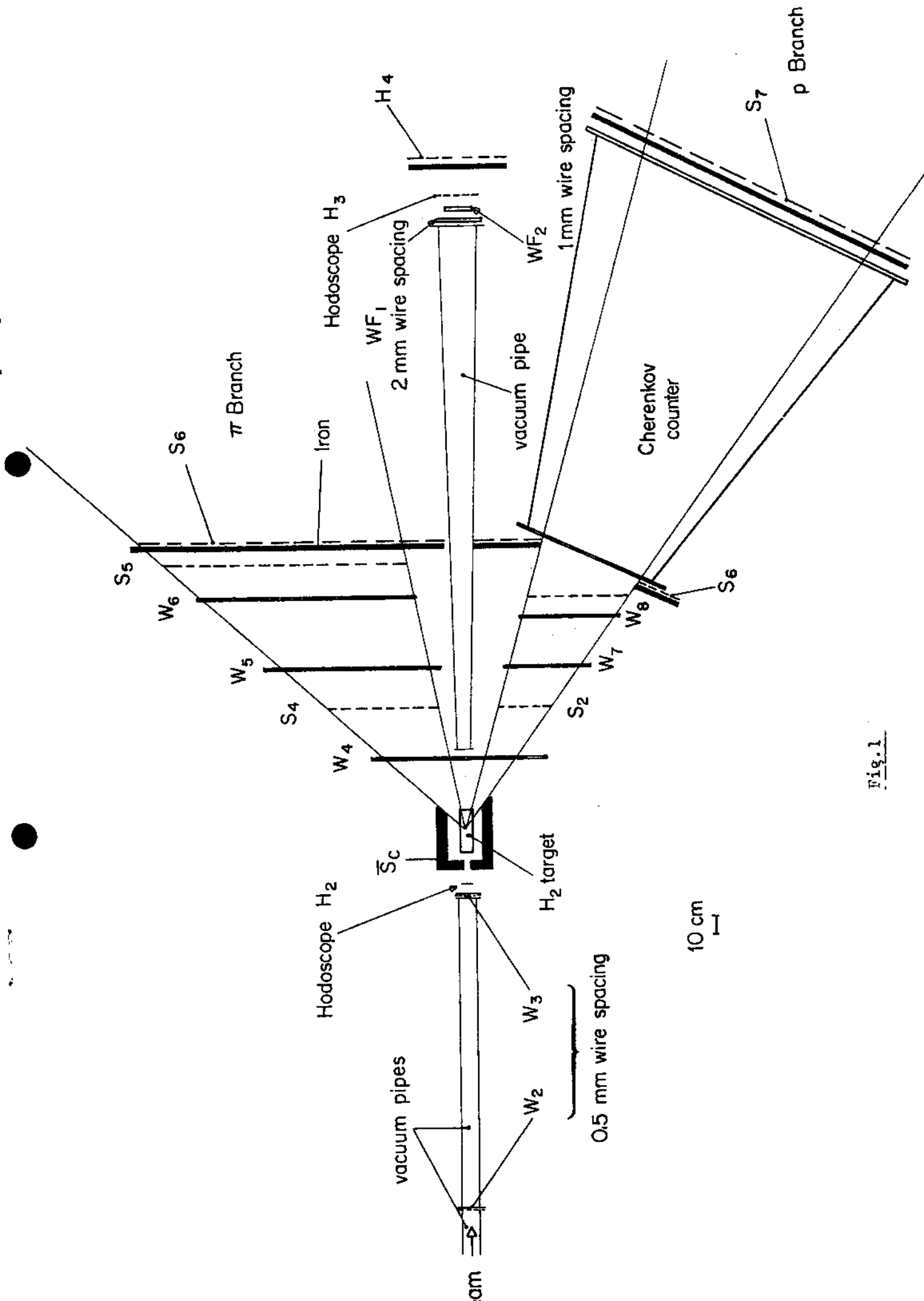


Fig.1