



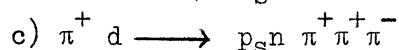
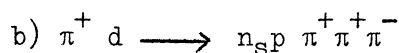
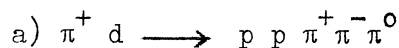
CM-P00074093

Proposal for an Exposure of the CERN 200 HBC at

5 GeV/c negative pions

Bologna - Florence Collaboration

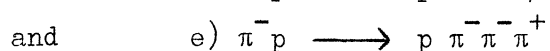
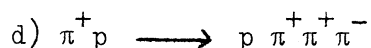
A peculiar effect has been observed ⁽¹⁾ in the behaviour of the π^+ pion effective mass distribution, by studying the π^+d interactions at 4.5 GeV/c in the 81 cm. Saclay DBC. This effect consists in a peak at about 1600 MeV/c² for each of the three following reactions:



Mainly because of the poor statistics, no definite conclusions could be drawn.

The study of reaction a) is now continuing in deuterium at 5 GeV. A large statistics should be achieved.

The non charge exchange reactions b) and c) would be studied much better in hydrogen, through the reactions:



being reaction e) the charge symmetric of c). This statement is valid to the extent that the so called spectator nucleon does not affect significantly reaction b) and c).

In both reactions d) and e) the N_{33}^* , (2π) intermediate processes play important roles, particularly in reaction d) where the intermediate two body production of N^{*++} , ρ^0 is dominant.

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Under the assumption that the 1600 MeV peak is a real effect due to the 3π vertex, reaction e) would provide more suitable conditions than reaction d).

Therefore we propose an exposure of the CERN 200 HBC at negative pions of 5 GeV/c. About 80.000 pictures would be sufficient to settle the problem which has been raised.

(1) Physics Letters, 19, 68, 1965