

pi-p and pi-pi scattering: towards the first LHC results

We discuss a possibility of an experiment at the LHC with leading neutrons production (charge exchange and double charge exchange processes). The latter could be used to extract from it $\pi^+ p$ and $\pi^+ \pi^+$ cross-sections. In this work we give some estimates for the cases of total, elastic and inclusive di-jet cross-sections and discuss related problems and prospects. All the steps from the theory to the experimental simulation of the signal and possible backgrounds are presented. These measurements could provide us with the first fundamental results from LHC.

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