

Central exclusive production in proton-proton collisions with the STAR experiment at RHIC

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Collaboration

STAR

Abstract content

We shall describe the physics program with tagged forward protons, focusing on Central Exclusive Production (CEP) in polarized proton-proton collisions at the Relativistic Heavy Ion Collider (RHIC), with the STAR detector at $\sqrt{s} = 200$ GeV. Preliminary results in CEP of two oppositely charged pions and kaons produced in the processes $pp \rightarrow pp\pi^+\pi^-$ and $pp \rightarrow ppK^+K^-$ shall be presented. Those Double Pomeron Exchange (DPE) processes, allow the final states to be dominated by gluonic exchanges. Silicon strip detectors placed in Roman Pots were used for measuring forward protons. The preliminary results are based on the measurement of the recoil system of charged particles in the STAR experiment's Time Projection Chamber (TPC). Ionization energy loss, dE/dx , of charged particles was used for particle identification (PID). In addition to those preliminary results, the present status and future plans of the diffractive physics at RHIC shall be described.

Primary author(s) : GURYN, Włoddek (Brookhaven National Laboratory)

Presenter(s) : GURYN, Włoddek (Brookhaven National Laboratory)

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