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## Measurements of identified particle spectra in diffractive $pp$ collisions with the STAR detector at RHIC

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We present the diffractive program with the STAR Roman Pot detectors at RHIC, focusing on the spectra of identified charged particles as pions, kaons and protons and their anti-particle counterparts in Single Diffraction ( $p + p \rightarrow p + X$ ) and Central Diffraction ( $p + p \rightarrow p + X + p$ ) processes.

The final state proton(s) were tagged in the STAR Roman Pot system while the identified charged particle tracks were reconstructed in the STAR Time Projection Chamber (TPC).

Ionization energy loss and time-of-flight of charged particles was used for particle identification. Moreover, the proton-anti-proton production asymmetry as a function of rapidity is presented to study the baryon number transfer over a large space in rapidity in single diffraction. Similar effect has been studied in proton-proton and proton-photon interactions but it is the first measurement in proton-Pomeron collision. In addition, the present status and future plans of the diffractive physics measurements at RHIC is described.

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