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MEASUREMENT OF THE CROSS-SECTION PRODUCTION OF V0 HADRONS IN PROTON-PROTON COLLISIONS AT 7 TEV ENERGY IN THE LHCB EXPERIMENT

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The LHCb detector is a forward spectrometer covering the pseudorapidity range 2< η <5. It is equipped with a high-precision tracking system, which includes a silicon microstrip vertex detector (VELO) located around the interaction point (IP8), large-area silicon microstrip detectors upstream of the dipole magnet, and three silicon microstrip stations downstream of the magnet. The track reconstruction efficiency exceeds 96% with a momentum resolution of approximately 0.5% and an invariant mass resolution between 10 and 20 MeV/c^2. Identification of charged hadrons is performed using two Ring-Imaging Cherenkov(RICH) detectors. Photons, electrons and hadron candidates are identified by a calorimetric system consisting of scintillating pad detectors, preshower detectors and electromagnetic and hadronic calorimeters. Muons are identified by a system that combines iron layers and multi-wire proportional chambers. The trigger system consists of a hardware stage (L0), which utilizes data from the calorimeters and muon system, followed by a software stage (High Level Trigger, HLT) that provides full event reconstruction.
As part of the Ion Fixed Target(IFT) working group of the LHCb collaboration, registration efficiencies and differential production cross-section for Ks mesons and Lambda baryons in p-p collisions were measured. These measurements are essential for evaluating cold nuclear matter effects and play a key role in identifying and investigating signal from quark-gluon plasma. The data used in this analysis were collected in 2016 at an energy of √⊠⊠= 7 TeV for p-p collisions. Differential cross-section were obtained as function of rapitidy y and transverse momentum p_T for K_s^0 , Λ and $\bar{\Lambda}$ within the rapidity range 1.5<y<4 and transverse momentum range 0.15 GeV< p_T <10GeV.

Author: KOLIEV, Sergiy (Institute for Nuclear Research NAS of Ukraine)

Co-authors: OKHRIMENKO, Oleksandr (INR NAS of Ukraine); PUGATCH, Valery (Institute for Nuclear Research, National Academy of Sciences of Ukraine(KINR))

Presenter: KOLIEV, Sergiy (Institute for Nuclear Research NAS of Ukraine)

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