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(G*) Strangeness production with the ATLAS detector

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The strange quark is the lightest sea quark in the proton after the up and down quarks, and its production at the LHC is crucial for the understanding of proton internal structure and fragmentation processes. In this work, strange particles are reconstructed using minimum-bias data from pp collisions at 13 TeV taken by the ATLAS detector. Their kinematic distributions and production cross-sections are studied. In particular, the K_s and Λ ($\bar{\Lambda}$) give clean signatures and high yield in the detector, while the Ξ^- (Ξ^+), despite its lower yield, could be a strong indicator of strangeness content as it contains two strange quarks. The reconstructed data samples are then compared with Monte Carlo samples to calculate particle detector acceptance and efficiency, to estimate the sensitivity of the data and to better understand strangeness production processes.

Keyword-1

strange quark

Keyword-2

ATLAS

Keyword-3

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