Contribution ID: **610** Type: **Poster**

Studies of Λ transverse polarization in p+p interactions within NA61/SHINE at the CERN SPS

The measurements of Lambda transverse polarization, i.e. the polarization in the direction transverse to the lambda production plane, have a long history. The unexpected observation of significant Lambda hyperon polarization in inclusive p+p and p+A collisions using unpolarized beams triggered theoretical efforts to describe this effect. Numerous models have been proposed to explain the origin of hyperon polarization. Several models have successfully explained the behavior of some hyperons, but none have been able to account for the behavior of the entire hyperon family.

NA61/SHINE is a fixed-target experiment at the CERN SPS with large acceptance and high particle identification capabilities. The first feasibility studies have shown that the properties of the magnetic field used by NA61/SHINE, together with high statistics of collected p+p collisions at beam momentum 158 GeV/c, offer possibilities to study Lambda polarization in several bins of pT and xF. Current studies concentrate on the extraction of Lambda yields based on an invariant mass distribution of selected pairs of proton and negatively charged pion. These yields are corrected by the MC simulations using EPOS and Fritiof model and two different methods. The poster will contain a description of the methodology of our studies and will present Lambda distributions with predictions of selected theoretical models.

Category

Experiment

Collaboration (if applicable)

NA61/SHINE

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