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Spontaneous Transverse Λ and Λ Hyperon Polarization Measurements at LHC

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Transverse Λ polarization observed over four decades ago contradicted expectations from early leading-order perturbative QCD calculations. Measurements of Λ polarization from unpolarized pp and pA collisions have been previously observed to increase as a function of xF and pT up to a few GeV range and approximately independent of beam energy. Recent studies have linked polarization to the process of hadronization, which describes how particular hadrons are formed from scattered quarks and gluons. The high energy of the LHC and the coverage and precision measurement possibilities from LHCb forward geometry are ideal for studying hyperon polarization as a function of both pT and xF . The status and prospects of Λ and Λ polarization measurements in pp, pPb, Pbp, and fixed-target pNe collisions at LHCb are presented

Category

Experiment

Collaboration (if applicable)

LHCb

Primary author: NUNEZ, Cynthia (University of Michigan (US))

Presenter: NUNEZ, Cynthia (University of Michigan (US))

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