

Workshop on Forward Physics and QCD at the LHC, the future Electron Ion Collider and Cosmic Ray Physics



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New transverse single spin asymmetry measurement of π^0 production at zero degree using RHICf detector

It has been under debate for more than three decades for the origin of transverse single spin asymmetry of forward meson production in the polarized proton+proton collision at high energy. Despite of intensive theoretical developments in pQCD framework, it is still an open question whether it is initial or final state effects. On the contrary, the latest experimental results raised possible contribution from none pQCD degree of freedom to the observed asymmetry. Thus the new experiment RHICf is executed at the STAR interaction point in order to examine possible finite asymmetry in the kinematics range where non-pQCD is expected to dominate. In this talk, new preliminary results of π^0 asymmetry at almost zero degree measured in transversely polarized proton+proton collision at $\sqrt{s}=510\text{GeV}$ are presented. A global interpretation in conjunction with existing data is discussed.

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