Polarized Λ_c^+ Production at RHIC

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ABSTRACT

To extract information about the polarized gluon distribution, $\Delta G(x, Q^2)$, in the nucleons, we propose Λ_c^+ productions in polarized pp scattering, $p + \vec{p} \to \vec{\Lambda}_c^+ + X$, which will be observed at RHIC experiment starting soon. For this process, we have calculated the spin correlation differential cross section, $d\Delta\sigma/dp_{_T}$, and the spin correlation asymmetry defined by $A_{LL} \equiv [d\Delta\sigma/dp_{_T}]/[d\sigma/dp_{_T}]$. We have found that the A_{LL} is sensitive to the polarized gluon distribution in the nucleon and thus the process is promising for testing $\Delta G(x, Q^2)$.

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