

Abstract Submitted
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Polarized gluon distribution from DIS and collider data

MASANORI HIRAI, Tokyo University of Science, SHUNZO KUMANO, High Energy Accelerator Research Organization — We investigate the determination of the polarized gluon distribution by a global analysis using the DIS and the collider data. The polarized gluon distribution gives an important information about gluon contribution to the nucleon spin, however it has still large uncertainty. In the DIS experiments, the J-Lab provides the precise data in the large- x and low- Q^2 region. The data is useful to determining the gluon distribution because the higher order contribution of the gluon is rather large at low Q^2 . In addition, the collider experiment at the RHIC has measured the π^0 production process. Since the process is sensitive to the gluon distribution, the data has the strong constraint power on the determination. Therefore, we include these data in the global analysis. The DIS data suggest the positive value in the medium and large- x region, however the RHIC data require the negative value in the small- x region. So, the gluon distribution changes the sign around $x \sim 0.1$ at $Q^2 = 1 \text{ GeV}^2$. We will discuss the behavior of the gluon distribution from the DIS and Collider data in the analysis.

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