

The Jacobi Polynomials QCD Analysis for Proton Spin Structure

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We present the results of our QCD analysis for polarized quark distribution and structure function $xg_1(x, Q^2)$. The analysis is based on the Jacobi polynomials expansion of the polarized structure functions. This allows to reconstruct with a high precision the polarizes parton distributions for measurement Bjorken x region using as an input seven first moments extracted from the data in NLO approximation. Our calculations for two approach, Bernestain polynomials and Jacobi polynomials are presented.

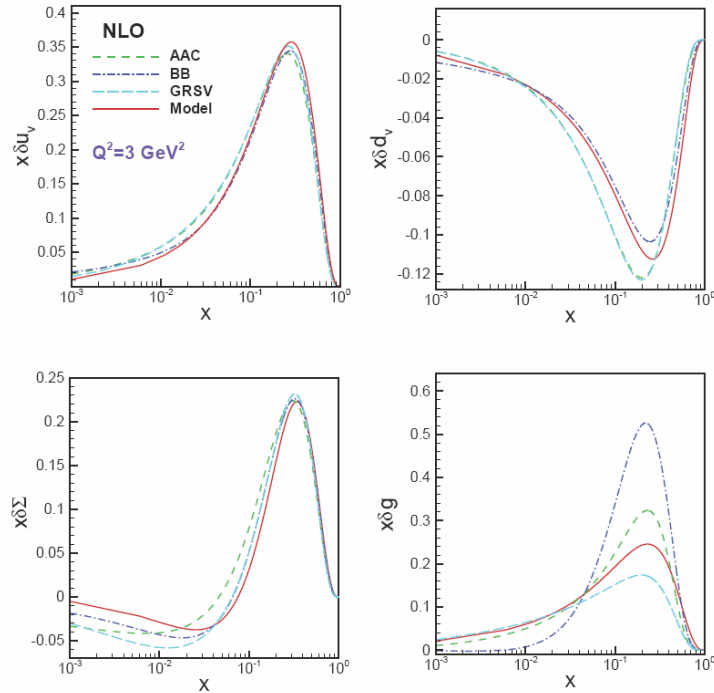


Figure 1. Polarized parton distributions in the proton at $Q^2=3 \text{ GeV}^2$ as a function of x in the NLO approximation. The solid line is our model, dashed line is the AAC model (ISET=3), dashed dotted line is the BB model (ISET=3) and long-dashed line is the GRSV model (ISET=1).