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## Proton Spin in Deep Inelastic Scattering

So far the analysis of the polarized structure functions have been limited to the evaluation of their integrals and comparing them to the prediction of the static quark model of the nucleon given by Ellis and Jaffe. We extended our analysis to the  $x$  dependence of the polarized structure functions and observe: the measured structure function excellently agrees with the prediction of the static quark model for

Bjorken  $x > 0.1$

and drops rapidly for  $x < 0.1$ . It is suggested that for Bjorken  $x > 0.1$  electrons get scattered on the undamaged constituent quarks (alias valence quarks)–quasi elastic scattering on the constituent quarks–and for  $x < 0.1$  the constituent quarks fragment. In the fragmentation strong interaction is involved which does not preserve the polarization.

About 50% of the constituent quarks survive the collision with electrons at  $Q^2 \sim 2 \text{ GeV}^2$  undamaged what implies that the constituent quark is a rather strongly bound rigid object. The polarization measurements of the quarks of the nucleon strongly supports the constituent quark as the step in the ladder between the sea quark and the nucleon. The low  $x$  physics is the only way to study the structure of the constituent quarks.

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