Structure Functions and Intrinsic Quark Orbital Motion

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Abstract: Covariant version of the quark model is studied. It is shown how the polarized and unpolarized structure functions depend on the quark intrinsic motion. The important role of the quark orbital momentum, by which the intrinsic motion is generated, appears as a direct consequence of the covariant description. At the same time, the procedure for obtaining 3D quark momenta distribution from the structure functions is suggested.