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Quark angular and transverse momentum in covariant approach

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We study the covariant version of the quark-parton model in which intrinsic 3D motion of quarks is consistently taken into account. Covariant kinematics combined with rotational symmetry of the quark momentum distribution in the nucleon rest frame generate new relations and constraints. In this way the predictions concerning TMDs, quark angular momentum or proton spin content have been done and will be presented. A possible algorithm for QCD evolution of TMDs will be suggested.

P.Z., Phys. Rev. D 89, 014012 (2014), Phys. Lett. B 751, 525 (2015).

A.Efremov, O.Teryaev and P.Z., J.Phys.Conf.Ser. 678 (2016) no.1, 012001, arXiv:1511.01164.

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