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Diquark role in large pT baryon and multiquark exotic state production with in pp- and dd-collisions

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Scalar diquark model of proton improved by parton intrinsic transverse momentum in hadrons is able to describe the strong scaling violation in proton production large transverse momentum p⊥ within perturbative QCD with higher twists in a wide energy range: √s = 11.5 GeV at U70 (NRC KI—IHEP, Protvino), √s = 23.4 GeV at Tevatron (FNAL, Chicago), and √s = 62 GeV at ISR (CERN, Geneva) is presented. Estimates for the production of tetraquark exotic states formed by scalar diquarks for the SPD experiment at the forthcoming NICA collider (JINR, Dubna) have been obtained.

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