COUPLINGS IN THE MODIFIED PERTURBATION THEORY: THE BJORKEN SUM RULE ANALYSIS

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We test the recently proposed Simple Modified Perturbation Theory (SiMPT) for the description of the Bjorken sum rule data at low momentum transfers. The SiMPT constructed on the two grounds: the first is pQCD with only one parameter added an effective «glueball mass» serving as an infra-red regulator, the second stems out of the ghost-free Analytic Perturbation Theory comprising non-power perturbative expansion that makes it compatible with linear integral transformations, is regular in the low-energy region and could serve as a practical means for the analysis of data below 1 GeV up to the infra-red limit. We study non-perturbative Bjorken sum rule higher twists correction by using the SiMPT, the integral representation for infinite sum of higher twists coefficients and the QCD-inspired model for the Q^2-dependence of the generalized Gerasimov-Drell-Hearn sum rule.