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Applications of the WW-type approximation to SIDIS

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We explore the complete cross-section for the production of unpolarized hadrons in semi-inclusive deep-inelastic scattering up to power-suppressed $\mathcal{O}(1/Q^2)$ terms in the Wandzura–Wilczek-type approximation, which consists in systematically assuming that $\bar{q}gq$ -correlators are much smaller than $\bar{q}q$ -correlators. Under the applicability of Wandzura–Wilczek-type approximations, certain relations among TMDs occur which will be used to approximate SIDIS cross-section by a smaller subset of TMDs. We further discuss the applicability of the Wandzura–Wilczek-type approximations on the basis of available data.

Primary authors: BASTAMI, Saman (University of Connecticut); AVAKIAN, Harut; EFREMOV, Anatoli (Joint Institute for Nuclear Research (RU)); KOTZINIAN, Aram (A.Alikhanyan National Science Laboratory (AM)); MUSCH, Bernhard U.; PARSAMYAN, Bakur (CERN, University of Turin and INFN); PROKUDIN, Alexey; SCHLEGEL, Marc (New Mexico State University); SCHNELL, Gunar; SCHWEITZER, Peter (University of Connecticut); TEZGIN, Kemal (University of Connecticut)

Presenter: TEZGIN, Kemal (University of Connecticut)

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