Contribution ID: **60** Type: **Talk**

Transverse single spin asymmetry from gT(x)

Tuesday 2 August 2022 11:50 (20 minutes)

In this presentation I will talk about a novel contribution to the transverse single spin asymmetry (TSSA) from the gT(x) distribution of the transversely polarized proton [1,2]. I will explain how this contribution, absent at the Born level, first appears at two loops and outline the key ideas in the derivation. Next, I will show the detailed results in SIDIS for all possible harmonics of the polarized cross section [2]. This comprehensive numerical computation covers all partonic channels in SIDIS and is focused on the prospects of the gT(x) contribution at the EIC. I will further show some of the very recent computations of the gT(x) contribution in forward pp [3] and pA [4] collisions (where the proton is transversely polarized), notably in connection to the odderon operator that appears in the unpolarized proton (or nuclei) in the high energy limit. One of the main goals of [4] is to shed light on the results from the PHENIX collaboration [5] of a strong (˜Aˆ-1/3) nuclear suppression of TSSA.

[1] S. B., Y. Hatta, H-n. Li, D.-J. Yang, Phys. Rev. D 100 (2019) 9, 094027
[2] S. B., Y. Hatta, A. Kaushik, H.-n. Li, Phys.Rev.D 104 (2021) 9, 094027
[3] S. B., Y. Hatta, A. Kaushik, H.-n. Li, in preparation
[4] S. B., A. Kaushik, E. A. Vivoda, in preparation
[5] PHENIX, Phys.Rev.Lett. 123 (2019) 12, 122001

Preferred track

Hadron Structure

Subfield

HEP theory

Attending in-person?

Yes

On behalf of collaboration?

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