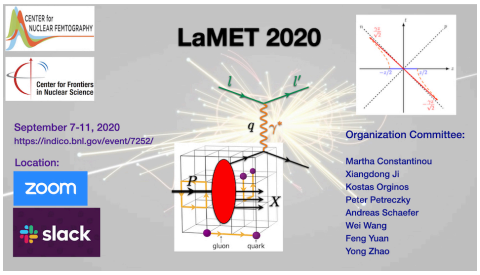

Contribution ID: **40** Type: **not specified**

One-Loop Matching for Spin-Dependent Quasi-TMDs

Monday 7 September 2020 11:50 (12 minutes)

Transverse-momentum-dependent parton distribution functions (TMDPDFs) provide a unique probe of the three-dimensional spin structure of hadrons. We construct spin-dependent quasi-TMDPDFs that are amenable to lattice QCD calculations and that can be used to determine spin-dependent TMDPDFs. We calculate the short-distance coefficients connecting spin-dependent TMDPDFs and quasi-TMDPDFs at one-loop order. We find that the helicity and transversity distributions have the same coefficient as the unpolarized TMDPDF. We also argue that the same is true for pretzelosity and that this spin universality of the matching will hold to all orders in α_s. Thus, it is possible to calculate ratios of these distributions as a function of longitudinal momentum and transverse position utilizing simpler Wilson line paths than have previously been considered.

Author: Ms SCHINDLER, Stella (MIT)

Co-authors: EBERT, Markus (MIT); STEWART, Iain (MIT); ZHAO, Yong (Massachusetts Institute of Technology)

Presenter: Ms SCHINDLER, Stella (MIT)

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