Correlations in Partonic and Hadronic Interactions - 2020 (CPHI-2020)



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Extraction of Sivers and Transversity: access to the exotics of polarized parton densities

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The Sivers and Transversity distributions represent the prototype of naive T-odd and chiral-odd parton densities, respectively. Having a good knowledge of the former allows to test the QCD prediction of specific non-universality, while the first Mellin moment of the latter, the so-called tensor charge, might represent a possible portal to new physics beyond the Standard Model. I will present the latest extraction of the Sivers function, for the first time starting from the extracted unpolarized TMD distribution in a consistent TMD framework. I will also discuss the latest results for Transversity from a global analysis of pion-pair production in deep-inelastic scattering and in proton-proton collisions, with particular emphasis on the comparison with recent lattice calculations of the valence and isovector components of the tensor charge.

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