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Probing TMDs through double quarkonium production in hadronic collisions

Tuesday 23 September 2025 16:30 (25 minutes)

Transverse momentum dependent parton distribution functions (TMDs) encode essential information on the transverse motion of partons inside nucleons, as well as their spin-orbit correlations. In this talk I will show how, by looking at the azimuthal asymmetries in the inclusive production of pairs of vector quarkonia (J/ψ, $\psi(2S)$, Υ mesons), one can probe different TMDs. In particular, quark and antiquark TMDs could be accessed in pion-proton scattering at the COMPASS and AMBER experiments at CERN, where the contributions of gluons is negligible. The impact of the present and future fixed-target experiments at the LHC (SMOG, LHCspin) on this kind of studies will be discussed as well.

Author: PISANO, Cristian (University and INFN Cagliari)

Presenter: PISANO, Cristian (University and INFN Cagliari)

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