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3D Ground Nucleon Structure from SIDIS CHAO PENG, Argonne National Laboratory, SOLID COLLABORATION, JLAB HALL A COLLABORATION — Nucleon is the basic building block of the visible universe, yet our knowledge about its structure at large space-time scales, where the perturbative QCD is not applicable, is still rudimentary. The Wigner distribution is a five-dimensional quantum phase space distribution that provides a unified framework describing the nucleon structure in terms of the parton distributions inside the nucleon. Integrating the Wigner distribution over its intrinsic transverse coordinate leads to the transverse-momentum-dependent (TMD) parton distribution function. TMD depicts a three-dimensional imaging of the nucleon, and plays an important role in understanding its spin structure. This three-dimensional distribution is experimentally accessible via the Drell-Yan process and the Semi-Inclusive Deep Inelastic (SIDIS) process. In this talk, I will discuss about the SoLID SIDIS program at JLab, and its projections on the 3D imaging of the nucleon will be presented.

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