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Polarized sold target for possible future AMBER program at CERN

Recently COMPASS showed an interesting result on the d-quark Sivers TMD PDF via SIDIS process with muon beam and the polarized deuteron polarized target. It showed that the d-quark Sivers asymmetry had almost twice larger than u-quark at high-x region.

In order to understand the d-quark OAM contribution on the nucleon spin structure, further measurements via other processes like a Drell-Yan are required. The COMPASS collaboration measured the azimuthal asymmetries which relates to the Sivers TMD PDF via DY process with a negative pion beam and with a proton solid target in 2015 and 2018. We plan to use a positive pion beam and a polarized proton target to obtain a larger asymmetry on the Sivers TMD PDF.

Here I will discuss on the future possible polarized target for this program.

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