

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

SoLID Kaon SIDIS Measurements with Polarized Targets

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— We plan to perform a measurement of the kaon production in the Semi-Inclusive Deep Inelastic Scattering (SIDIS) with SoLID using both the transversely polarized proton target and the transversely polarized ^3He target as effective polarized neutron target. This measurement will be carried out in parallel with two already approved SoLID SIDIS experiments which will measure the pion production (E12-10-006 and E12-11-108). We will perform the offline analysis to identify the kaon events using high precision time-of-flight information, then extract the kaon Collins asymmetries, Sivers asymmetries and other TMD asymmetries. New data from this measurement will provide not only important input to determine the TMDs of u and d quarks by combining with the pion measurements from SoLID and elsewhere, but also has the unique sensitivity to sea quarks. Our measurement will have an important contribution to the development of the TMD physics and provide important guidance for studying sea quark and gluon TMDs at the future Electron-Ion Collider.

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Date submitted: 07 Jan 2021

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