

## Accessing TMDs from single pion and kaon SIDIS with CLAS12

*Wednesday, June 21, 2023 2:00 PM (30 minutes)*

Semi inclusive deep inelastic scattering is a well established tool to study TMDs and fragmentation functions. With the CLAS12 detector at Jefferson Laboratory (JLab) precise, multidimensional measurements of cross sections and asymmetry observables become possible in the valence quark regime, for the first time. As a first observable, the structure function ratio  $F_{LU}^{\sin\phi}/F_{UU}$  was studied based on beam single spin asymmetries from pion and kaon SIDIS. The talk will present a comprehensive multidimensional study for all pions, as well as charged kaons, and discuss the connection of the observable to TMDs and the impact of the new data on our understanding of the involved TMDs. Furthermore, an overview on ongoing and planned studies to extract the  $\cos(\phi)$  and  $\cos(2\phi)$  moments of the SIDIS cross section, as well as an LT separation of the  $\phi$  integrated cross section, will be provided.

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