Abstract Submitted
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The 3-D Structure of the Pion From Pion-induced Drell-Yan Scattering[1] LEONARD GAMBERG, Pennsylvania State University, PATRICK BARRY, ASTRID HILLER-BLIN, WALLY MELNITCHOUK, NOBUO SATO, Jefferson Lab — We present a phenomenological study of the transverse momentum distribution (TMD) parton distribution fuction (PDF) of the pion, from pion-induced Drell-Yan (DY) lepton-pair production with existing pion DY data. We describe the matching of the high-transverse momentum (pT) collinear fixed order perturbative QCD pT spectrum, with the low-pT TMD spectrum using using the state-of-the-art Collins-Soper-Sterman (CSS) TMD factorization formalism. Within the global QCD analysis framework of the JAM (Jefferson Lab Angular Momentum) Collaboration, we extract the pion TMD PDF using Bayesian inference. This setup will allow us to perform a simultaneous and self-consistent determination of pion and nucleon TMD PDFs from hard processes and map out the 3-D structure of pions.

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