

Transverse Single-Spin Asymmetries of Midrapidity Eta Mesons at PHENIX

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Transverse single-spin asymmetries (TSSAs) of proton-proton collisions have a long history of revealing the richness of QCD. They were originally measured in fixed target experiments and ignored for a couple decades because it was assumed that they came from calculable soft QCD interactions. But they have been found to persist in collisions up to $\sqrt{s} = 510$ GeV, well into the perturbative regime of QCD, and yet their origin remains poorly understood.

TSSA measurements have allowed for the development of both transverse momentum dependent and collinear twist-3 descriptions of nonperturbative spin-momentum correlations in the nucleons as well as in the process of hadronization. As hadrons, eta mesons are sensitive to both initial- and final-state nonperturbative effects for a mix of parton flavors. Their comparison to neutral pions may provide information on potential effects due to strangeness, isospin, or mass. The status of the TSSA of eta mesons at midrapidity for 200 GeV proton-proton collisions from the PHENIX 2015 data set will be shown.

Primary author: LEWIS, Nicole (PHENIX)

Presenter: LEWIS, Nicole (PHENIX)

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