

Illuminating QCD and Nucleon Structure Through the Study of Hadrons Within Jets and Dihadron Correlations at RHIC

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Over the last decade, theoretical and experimental engagement of the oft-challenging phenomena of nucleon transverse-spin effects has unlocked tantalizing opportunities for new insight into nucleon structure and more expansive formulations of QCD, e.g. with higher dimensions in momentum space. The RHIC experiments continue this exploration through an array of measurements from high-energy polarized-proton collisions. Among these studies are the azimuthal distributions of hadrons within jets and dihadron correlations. Recent breakthroughs may illuminate further longstanding questions: Do factorization and universality extend to collinear transversity and transverse-momentum-dependent (TMD) formulations of QCD? How do TMD functions evolve with changing kinematics? Beyond existing probes, future measurements will enable even wider frontiers in understanding QCD and nucleon structure.