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Spin, Structure, and Synergy: COMPASS and the Experiments of Tomorrow

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The COMPASS experiment at CERN has played a pivotal role in advancing our understanding of the spin structure and dynamics of the nucleon, as well as the internal landscape of hadrons. With its versatile muon and hadron beams, COMPASS has delivered key insights into transverse momentum-dependent distributions (TMDs), generalized parton distributions (GPDs), and the nucleon's spin puzzle. As we look ahead, COMPASS stands as a critical bridge to a new era of precision QCD studies, completing and complementing the physics programs of AMBER, the Electron-Ion Collider (EIC), the JLab 22 GeV upgrade, and emerging LHC spin initiatives. This talk will highlight recent COMPASS results, their theoretical impact, and how the experiment's legacy and ongoing efforts synergize with the next generation of hadron structure investigations.

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