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Current Status and Future Prospects on Transverse-Momentum Distribution Functions

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Probing the structure and dynamics of matter has witnessed a dramatic development overthe last decades with new theoretical advances to probe nucleons and nuclei beyond just a one-dimensional approach through Transverse-Momentum Distribution (TMD) functions. TMDsprovide crucial insight into the confined motion of quarks and gluons with a transverse momen-tumkTinside a nucleon and nucleus.After a brief theoretical overview of various processes in both fixed-target and collider ex-periments probing TMDs, various experimental results will be reviewed, including results ob-tained by the COMPASS collaboration, at JLab, and the RHIC Spin program. An overview ofprospects at the future Electron-Ion Collider (EIC) facility accessing quark and gluon TMDswill be provided at the end.

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