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Fragmentation functions at future lepton colliders

Tuesday 9 July 2024 14:00 (20 minutes)

Fragmentation functions (FFs) are essential non-perturbative inputs for precision calculations of hadron production cross sections in high energy scattering from first principle of QCD. They are usually extracted from global analysis on world data from single inclusive hadron production at lepton colliders, semi-inclusive DIS and pp collisions, e.g., as in recent NPC23 analysis. Future lepton colliders operated at several center of mass energies will provide high-quality hadron multiplicity data from Z boson to W boson pair as well as Higgs boson production, and ensure an accurate and precise determination of FFs based solely on data from lepton colliders. Projection for several scenarios of future leptons colliders are considered and compared to FFs from most recent global determination.

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