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**Polarized jet fragmentation functions** FANYI ZHAO, ZHONG-BO KANG, University of California, Los Angeles, KYLE LEE, Stony Brook University — The internal structure of jets has been an active research topic in QCD in recent years. In this talk, we propose to use one particular jet substructure - so-called jet fragmentation function to study spin-dependent distribution and dynamics. In particular, we provide the general theoretical framework for studying the distribution of hadrons inside a jet by taking full advantage of the polarization effects. The key development referred to as "polarized jet fragmentation functions", opens up new opportunities to study both collinear and transverse momentum dependent (TMD) fragmentation functions via jets. Besides providing the theoretical understanding for the well-known Collins asymmetry for hadron in the jet, we also give two additional examples involving polarization of Lambda baryons inside the jet at both RHIC/LHC and the future Electron-Ion Collider.

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