

Transverse distribution functions and jet fragmentation functions

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Light-front wave functions (LFWF) of hadrons of mesons can be derived from the projection of their Bethe-Salpeter wave functions on the light front. We obtain the Poincaré-covariant wave functions within a functional approach to QCD, solving first the quark gap equation within a chiral-symmetry preserving truncation scheme and then the Bethe-Salpeter equation of the mesons. With the LFWF in hand, we can derive the meson's parton distribution amplitude (PDA), transverse momentum distribution (TMD) and parton distribution function (PDF) for the light mesons, π and K mesons, as well as quarkonia. Last not least, I will present recent progress on the calculation of elementary quark-fragmentation functions and their generalization to jet functions.

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