Measurement of Light-Cone Wave Functions by Diffractive Dissociation

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Diffractive dissociation of particles can be used to study their light-cone wave function. This was done for pions in Fermilab experiment E791. Diffractive dissociation of 500 GeV/c π^- mesons into di-jets show that the $|q\bar{q}\rangle$ light-cone asymptotic wave function describes the data well for $Q^2 \sim 10$ (GeV/c)^2 or more. Evidence that the experimental conditions fulfilled the requirements for color transparency comes from measurement of the A-dependence of the yield of the diffractive di-jets. Preliminary results from measuremets of the light-cone wave function of the photon will be presented. Similar studies of the light-cone wave function of other hadrons will be discussed.