Light-Cone 2024: Hadron Physics in the EIC era



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Hadron structure in two dimensional QCD

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The meson's boundstate equation in two dimensional QCD under large Nc limit (QCD₂) are exactly solvable in both light-front quantization and equal time quantization. In the meanwhile, QCD₂ captures some key features of realistic QCD in four dimension, such as color confinement, nonzero quark condensate. QCD₂ become an ideal theoretical laboratory for investigate theoretical method dealing with hadrons' structure from a field theory first-principle approach, such as Large Momentum Effective Theory, NRQCD factorization. We present the QCD₂ investigation of nonperturbative quantities: e.g. light-cone/quasi PDF/GPD, (heavy quark) fragmentation function, intrinsic charm distribution and the energy decomposition of a hadron is also discussed.

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