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Nucleon structure in Minkowski space

Friday, September 27, 2024 3:00 PM (40 minutes)

I will review the application of few-body methods to explore the structure of light hadrons in Minkowski space. The description of the nucleon is based on the solution of the Bethe-Salpeter equation in Minkowski space built with phenomenological kernels. In particular, it will be presented a quantitative exploration of the proton properties obtained by solving the projected Faddeev-Bethe-Salpeter equation onto the light-front. The proton valence parton distribution, transverse momentum distributions and the image of the valence state on the null-plane will be shown. In addition, it will be discussed the solution of the Bethe-Salpeter equation in Minkowski space for a quark-diquark model obtained with the one-gluon exchange kernel, as well as its ultraviolet properties in covariant gauges. Some future prospects of research will be provided.

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