ID de Contribution: **187**   Type: **Seminar**

Pion Transverse Momentum Distribution in Minkowski space.

mardi 19 septembre 2023 15:00 (30 minutes)

I will discuss the pion structure within a dynamical model based on the solution of the Bethe-Salpeter equation in Minkowski space.
The model consider the pion as quark anti-quark bound state, interacting through a one-gluon exchange. The inputs of the model are the quark and gluon masses, and a scale parameter related to the extended quark-gluon vertex. Within this model, we obtain the full parton distribution function, its contribution due to light-front valence wave function and a comparison with experimental data, after the aplication of a NLO evolution[1]. We also present the unpolarized transverse-momentum dependent quark distributions. In addition, I will show that the model is able to compute other hadronic observables as pion weak decay constant, the valence probability, the LF-momentum distributions, the distribution amplitudes, the probability densities both in the LF-momentum space and the 3D space given by the Cartesian product of the covariant Ioffe-time and transverse coordinates [2]. Finally, we calculated the pion electromagnetic form factor with a good agreement with available experimental data [3].

References:

1. W. de Paula, E. Ydrefors, J. H. Alvarenga Nogueira, T. Frederico and G. Salme, Phys. Rev. D 105 (2022), L071505

2. W. de Paula, E. Ydrefors, J. H. Alvarenga Nogueira, T. Frederico and G. Salme, Phys. Rev. D 103 (2021) no.1, 014002

3. E. Ydrefors, W. de Paula, J. H. A. Nogueira, T. Frederico and G. Salme, Phys. Lett. B 820 (2021), 136494

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Classification de Session: Plenary