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# The structure of the pion in Minkowski space

*Thursday, September 26, 2024 9:00 AM (40 minutes)*

In this seminar I will analyze the structure of the pion obtained from a dynamical model based on the solution of the Bethe-Salpeter equation in Minkowski space. The components of the Bethe-Salpeter amplitude are written in terms of the Nakanishi integral representation. The interaction kernel has massive quark and gluon propagators and an extended quark-gluon vertex. Within this model, we obtain the 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 [1]. We also calculate hadronic observables as the pion electromagnetic form factor [2], the parton distribution function [3] and the unpolarized transverse momentum distribution[4].

References:
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3. W. de Paula, E. Ydrefors, J. H. Alvarenga Nogueira, T. Frederico and G. Salme, Phys. Rev. D 105 (2022) L071505
4. W. de Paula, T. Frederico and G. Salme, Eur. Phys. J. C (2023) 83, 985

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