

Double parton distributions of the pion

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We present predictions for the double parton distribution of valence quarks in the pion in the framework of chiral quark models. The distribution has a very simple form with factorized transverse and longitudinal degrees of freedom. The dependence on the longitudinal momenta of the valence quarks is of the form $\delta(1 - x_1 - x_2)$, which complies to the formal requirements of the Gaunt-Stirling sum rules. The necessary dDGLAP evolution to higher momentum scales is performed via the Mellin moments. We explore its role on the correlation defined as the ratio of the double distribution to the product of single distributions. We notice that the ratios of the Mellin moments $\langle x_1^n x_2^m \rangle / \langle x_1^n \rangle \langle x_2^m \rangle$ are scale invariant, providing suitable measures to be tested in future lattice simulations.

Authors: BRONIOWSKI, Wojciech (IFJ PAN); RUIZ ARRIOLA, Enrique (Universidad de Granada)

Presenter: BRONIOWSKI, Wojciech (IFJ PAN)