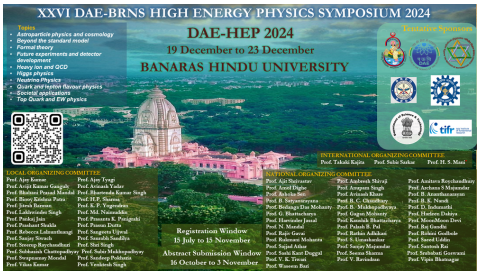

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Investigating skewness effects in proton GPD $\tilde{H}^{\nu}_{2T}$ with the light-front quark-diquark model

We present an analysis of generalized parton distribution (GPD) $\tilde{H}^{\nu}_{2T}$ of the proton with non-zero skewness, using the light-front quark-diquark model (LFQDM).
This study examines how skewness shapes the internal structure of the proton at higher-twist, particularly through the unintegrated quark-quark GPD correlator with the Dirac matrix structure $\Gamma = \gamma^j$. By systematically solving this correlator and aligning our results with the standard parameterization equations, we derive explicit expressions for the GPD $\tilde{H}^{\nu}_{2T}$. These findings may offer insights that are relevant to experimental studies of Compton form factors (CFFs), which can be observed in scattering cross-sections, and suggest the potential of the LFQDM framework to aid in the understanding of three-dimensional hadron structure.

Field of contribution

Phenomenology

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