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Light front wave functions of mesons from the Dyson-Schwinger/Bethe-Salpeter equations approach

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The light front wave functions (LFWFs) are conventionally obtained by solving the light-cone QCD Hamiltonian. In this talk, I'll demonstrate an alternative approach, which is to extract the leading Fock-state LFWFs (LF-LFWFs) of light and heavy pseudo-scalar and vector mesons from their dynamically solved Bethe-Salpeter wave functions. An important property of these LF-LFWFs is that they imply the existence of considerable higher Fock-states in light mesons. Using these LF-LFWFs, we show the 3D imaging of the mesons with the help of the generalized parton distributions and the transverse momentum dependent PDFs. We will also show that they well produce the diffractive vector meson electroproduction data at HERA within the color dipole model.

Primary author: SHI, Chao (Nanjing University of Aeronautics and Astronautics)

Co-authors: CHEN, Xurong; Dr XIE, Yaping

Presenter: SHI, Chao (Nanjing University of Aeronautics and Astronautics)

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