

# XVth Quark Confinement and the Hadron Spectrum



Contribution ID: 160

Type: Oral

## Properties of deuteron on the light front

*Thursday 22 August 2024 11:00 (20 minutes)*

We investigate the internal structure of deuteron using the light-front wave functions obtained from the two Schrödinger-like equations: the light-front holographic QCD equation and the 't Hooft equation. The former governs the transverse dynamics inside the composite system, while the latter describes the confinement in the longitudinal direction. After generating the wave functions, we employ them to investigate the electromagnetic form factors, structure functions and tensor-polarized properties of the deuteron. As a spin-one system, deuteron exhibits a unique structure, more complex than that of spin-0 and spin-1/2 systems. We also briefly discuss the investigation of this system using the basis light-front approach, wherein we solve for the wave functions by considering the fundamental QCD interactions among the quarks and gluons inside the deuteron.

**Author:** KAUR, Satvir (Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou)

**Presenter:** KAUR, Satvir (Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou)

**Session Classification:** Strongly-Coupled Theories and Dark Matter

**Track Classification:** G: Strongly-Coupled Theories and Dark Matter