Contribution ID: **33** Type: **Contributed talk**

Heavy-light Pseudoscalar Mesons: Light-Front Wave Functions and Generalized Parton Distributions

Monday 8 July 2024 16:55 (20 minutes)

The internal structure of all lowest-lying pseudo-scalar mesons with heavy-light quark content is studied in detail using an algebraic model that has been applied recently, and successfully, to the same physical observables of pseudo-scalar and vector mesons with hidden-flavor quark content, from light to heavy quark sectors. The algebraic model consists on constructing simple and evidencebased ans¨atze of the meson's Bethe-Salpeter amplitude (BSA) and quark's propagator in such a way that the Bethe-Salpeter wave function (BSWF) can then be readily computed algebraically. Its subsequent projection onto the light front yields the light front wave function (LFWF) whose form allows us a simple access to the valence-quark Parton Distribution Amplitude (PDA) by integrating over the transverse momentum squared. We exploit our current knowledge of the PDAs of lowest-lying pseudo-scalar heavy-light mesons to compute their Generalized Parton Distributions (GPDs) through the overlap representation of LFWFs. From these three dimensional knowledge, different limits/projections lead us to deduce the related Parton Distribution functions (PDFs), Electromagnetic Form Factors (EFFs), and Impact parameter space GPDs (IPS-GPDs). When possible, we make explicit comparisons with available experimental results and earlier theoretical
predictions

session

C. Hadron Structure

Primary authors: ALMEIDA ZAMORA, Bilgai (Universidad de Sonora/Universidad Pablo de Olavide); SEGOVIA, Jorge (University Pablo de Olavide, Seville); Dr COBOS MARTÍNEZ, Jesús Javier (Universidad de Sonora); Dr BASHIR, Adnan (Universidad de Michoacan); Dr RAYA, Khépani (Universidad de Huelva); Dr RODRÍGUEZ QUINTERO, José (Universidad de Huelva)

Presenter: SEGOVIA, Jorge (University Pablo de Olavide, Seville)

Session Classification: C. Hadron Structure