



Contribution ID: 91

Type: Talk

## Forward-limit generalized parton distributions of the $\eta_c$ -meson

*Tuesday 30 July 2024 14:45 (20 minutes)*

The formalism of short-distance factorization allows to connect light-cone correlators with spacelike ones. The later being directly accessible in Euclidean lattices, and the former being the key objects for all of parton physics, the possibility of studying hadron structure in the framework of lattice QCD is opened. In this work we take advantage of this formalism –conveyed through the pseudo-distribution approach– to compute, for the first time, the generalized parton distributions (GPDs) of the  $\eta_c$ -meson. To this end we use CLS ( $n_f = 2$ ) ensembles of gauge configurations to evaluate the  $\eta_c$ -meson’s pseudo-GPD for a number of  $t$ -values. We study the continuum– and light-cone–limit of our results. Finally, relying on analytic properties of Ioffe-time distributions, we achieve a model-independent extraction of the  $\eta_c$ -GPD. The  $\eta_c$  being a heavy pseudo–scalar meson, direct comparison with similar results available for lighter ones –say, pions– allows for a pioneering analysis of the effect of quark masses on the structure of hadrons.

**Primary author:** MORGADO CHÁVEZ, Jose Manuel (LSN/DPhN/Irfu CEA-Saclay)

**Co-authors:** Mr BLOSSIER, Benoît (IJCLab); Mr MEZRAG, Cédric (Irfu/CEA-Saclay); SAN JOSÉ PÉREZ, Miguel Teseo (IJCLab)

**Presenter:** MORGADO CHÁVEZ, Jose Manuel (LSN/DPhN/Irfu CEA-Saclay)

**Session Classification:** Structure of hadrons and nuclei

**Track Classification:** Structure of Hadrons and Nuclei