Contribution ID: **73** Type: **contributed parallel talk**

Dipion distribution amplitudes from the D-> pi pi l nu_l semileptonic decay

Thursday, 20 July 2023 15:00 (20 minutes)

The light-cone distribution amplitudes of two-pion states are universal hadronic objects involved in the factorization of heavy hadron decays or in the large momentum-transfer transitions with two pions in the final state. The leading twist-2 distribution amplitudes are parameterized in terms of the functions of the dipion invariant mass serving as coefficients in the Gegenbauer expansion. As a new method to determine these functions, we suggest to use the measurements of the $D \to \pi\pi\ell\nu_\ell$ semileptonic decay. The differential decay distributions are expressed in terms of the $D \to \pi\pi$ form factors, using for the latter the QCD light-cone sum rules in terms of dipion distribuiton amplitudes.
As a first application of this method, we employ the available BESS-III data on $D^0 \to \pi^-\pi^0\ell^+\nu_\ell$ decay distribution and fit the first few Gegenbauer functions for the isospin-1 dipion distribution amplitudes.

Consent

I consent to recording/broadcasting my presentation.

Primary author: KHODJAMIRIAN, Alexander

Co-authors: TETLALMATZI-XOLOCOTZI, Gilberto; KELLERMANN, Ryan

Presenter: KHODJAMIRIAN, Alexander

Session Classification: Parallel A

Track Classification: decays