Contribution ID: **24** Type: **not specified**

Lattice Calculation of the Second Moment of the Pion Light-Cone Distribution Amplitude

Tuesday 7 December 2021 11:15 (15 minutes)

The pion light-cone distribution amplitude (LCDA) carries information about the momentum distribution of its quarks, which is an important input to various experiments. We present a proof-of-concept lattice calculation of the second Mellin moment of the pion LCDA as the first numerical implementation of the heavy-quark operator product expansion (HOPE) method. The resulting value for the second Mellin moment, determined in quenched QCD at a pion mass of $m_\pi = 550$ MeV at a factorization scale of 2 GeV, is $\langle \xi^2 \rangle = 0.210 \pm 0.013$ (stat.) ± 0.034 (sys.). This result is compatible with those from previous determinations of this quantity.

Authors: GREBE, Anthony; LIN, David (National Yang Ming Chiao Tung University); KANAMORI, Issaku (R-CCS, RIKEN); PERRY, Robert; MONDAL, Santanu (Los Alamos National Laboratory); DETMOLD, William (Massachusetts Institute of Technology); ZHAO, Yong (Brookhaven National Laboratory)

Presenter: GREBE, Anthony

Session Classification: Session II