



Contribution ID: 4

Type: **Talk**

## **x-dependent Light Baryon LCDAs from Lattice QCD**

*Tuesday 4 November 2025 17:20 (20 minutes)*

We present the results of lattice QCD calculation of all leading-twist  $x$ -dependent Light-cone Distribution Amplitudes (LCDAs) for baryons in light octet, within the framework of Large-momentum Effective Theory (LaMET). We implement a novel Hybrid renormalization scheme for baryon nonlocal operators, and perform simulations at 4 different lattice spacings  $a = \{0.052, 0.068, 0.077, 0.105\}$  fm, achieving reliable and precise results of  $x$ -dependent baryon LCDA. To access the large momentum regime and facilitate matching to light-cone, we simulate the quasi-Distribution Amplitudes (quasi-DAs) with hadron momenta  $P_z$  of about  $1\sim 3$  GeV. The numerical calculations employ CLQCD ensembles with stout smeared clover fermions and a Symanzik gauge action, and several new techniques are also developed to improve the extrapolation and inversion in matching procedure. We present the resulting momentum-fraction distributions for the two light quarks in the light baryon.

### **Parallel Session (for talks only)**

Structure of hadrons and nuclei

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