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## Parton distribution functions of $\Delta^+$ on the lattice

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We perform a first calculation for the unpolarized parton distribution function of the  $\Delta^+$  baryon using lattice QCD simulations within the framework of Large Momentum Effective Theory. Two ensembles of  $N_f = 2+1+1$  twisted mass fermions are utilized with a pion mass of 270 MeV and 360 MeV, respectively. The baryon, which is treated as a stable single-particle state, is boosted with momentum  $P_3$  with values  $\{0.42, 0.83, 1.25\}$  GeV, and we utilize momentum smearing to improve the signal. The unpolarized parton distribution function of  $\Delta^+$  is obtained using a non-perturbative renormalization and a one-loop formula for the matching, with encouraging precision. In particular, we compute the  $\overline{d}(x) - \overline{u}(x)$  asymmetry and compare it with the same quantity in the nucleon, in a first attempt towards resolving the physical mechanism responsible for generating such asymmetry.

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