

Nucleon charges and quark momentum fraction with $N_f = 2 + 1$ Wilson fermions

Thursday, 26 July 2018 12:00 (20 minutes)

We present a nucleon structure analysis including the charges of isovector dimension-three operators as well as the forward matrix elements of twist-2, dimension-four operators. Computations are performed on CLS ensembles with $N_f = 2 + 1$ Wilson fermions, covering four values of the lattice spacing and pion masses down to $M_\pi \approx 200$ MeV. Several source-sink separations (typically ~ 1.0 fm to ~ 1.5 fm) allow us to assess excited-state contaminations. Results on each ensemble are obtained from simultaneous two-state fits including all observables and all available source-sink separations with the mass gap as a free fit parameter. Finally, the chiral and continuum extrapolation is performed to extract physical results.

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Session Classification: Hadron Structure

Track Classification: Hadron Structure