

P5 Town Hall Meeting



Contribution ID: 100

Type: Early Career Scientist

Elucidating the quark and gluon distributions in the nucleon, pion, and kaon from lattice QCD

Understanding the internal structure and dynamics of protons and neutrons - the complex many-body systems consisting of strongly interacting quarks and gluons - is at the core of exploring the visible matter universe. However, precise knowledge of the gluon distributions and their roles in hadron structures remains one of the most challenging but fundamental issues in nuclear and particle physics. In this short remark, I will discuss the particular case of gluons and the potential impact that first-principles lattice QCD can have on our understanding of their distributions inside hadrons. With the prospects for determining high-precision quark-gluon distributions, lattice QCD has the potential to complement the theoretical predictions of physics outcomes from present and next-generation hadron colliders.

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