

QCD corrections to Coulomb potential at vanishing transverse momenta

Friday 19 July 2024 18:00 (15 minutes)

The multi-gluon exchanges between quark loops constitute a contribution to confining force inside hadronic states at vanishing transferred momenta and finite strong coupling. In this talk, we present calculations of QCD corrections to Coulomb potential in the configuration of multi-gluon exchanges between two quark loops (four-quark scattering amplitude) in the limit of vanishing transferred momenta. These contributions are shown to induce an attractive interaction, possibly measurable as a macroscopic force. We summarize the primary experimentally observable consequences of this attractive interaction and concentrate on the next steps that should shed more light on the magnitude and possible presence of this attractive interaction at macroscopic scales. The talk is largely based on arxiv:2212.11667, which was recently finalized and submitted to EPJ about a month ago.

Alternate track

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Yes

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