

The three- and four-gluon vertices from lattice QCD in Landau gauge

We present our latest results from lattice-QCD simulations concerning the three-gluon vertex in scenarios beyond the conventional symmetric and soft-gluon situations. These outcomes stem from extensive quenched lattice simulations with high statistical accuracy. To analyze these outcomes, we adopt a tensorial basis that enables the representation of the three-gluon form factors using momentum variables that exhibit Bose symmetry. Our data highlights a significant prevalence of the tree-level tensor element.

We also present our current preliminary results on the four-gluon vertex form factors obtained also from quenched lattice QCD simulations with a large set of configurations for different values of the lattice spacing. As in the three-gluon vertex, it is expected a clear dominance of the form factor associated with the tree-level tensor.

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