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The four gluon vertex from lattice QCD

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The four gluon one-particle irreducible Green function contributes to various quantities with phenomenological relevance. An example where the four gluon plays a role is the determination of the gluon propagator, a basic building block for QCD, using continuum methods. This four leg Green function is poorly known and we are only starting to grasp its non-perturbative structure. Here, we report on the computation of the one-particle irreducible four gluon Green function, in the Landau gauge, with lattice simulations. Besides stating the problems associated with the computation, several form factors that characterise this Green functions are measured.

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